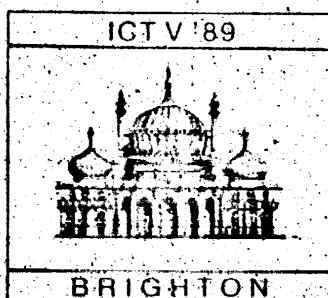


08 JAN 91

V INTERNATIONAL CONGRESS OF TOXICOLOGY
BASIC SCIENCE IN TOXICOLOGY

1057 Participants



PROGRAMME

BRIGHTON ENGLAND

16-21 JULY 1989

2501646057

ACKNOWLEDGEMENTS

The Executive Committee would like to thank the following for their generous support:

Astra Foundation
Bayer UK Limited
Beecham Pharmaceuticals
Bio-dynamics, USA
Boehringer Ingelheim Zentrale GmbH
Brighton Borough Council Tourism and Resort Services Department
British Toxicology Society
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Centre de Recherche Delalande
Ciba-Geigy Pharmaceuticals
Duphar BV - Netherlands
E Merck
European Society of Toxicology
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Hoffmann La Roche Inc USA - Research and Development Division
ICI Agriculture Business and Central Toxicology Laboratory
ICI Pharmaceuticals
International Life Sciences Institute
Institut de Recherches Internationales Sofrier
RHIA Section on Toxicology
International Union of Toxicology
Inveresk Research International
Life Science Research
Lilly Research Laboratories
May & Baker Pharmaceuticals - Rhone-Poulenc Limited
Merck Sharp & Dohme Research Laboratories
Merrill Dow Research Institute
MI Laboratories PLC
Otsuka Pharmaceutical Company Limited
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US Air Force European Office of Aerospace Research & Development (EOARD), Air Force Office of Scientific Research, Bolling AFB, DC
The Wellcome Trust
Wyeth Laboratories

MEDICAL ADVISER

Dr A Yardley Jones
Group Chief Medical Adviser Burmah Oil

08 JAN 91

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ICT V

INTERNATIONAL UNION OF TOXICOLOGY

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IUTOX '89 Limited - Registered in England - No. 2168212
 Registered address - Central Toxicology Laboratory
 Alderley Park, Macclesfield, SK10 4TT, UK

GENERAL INFORMATION

VENUE

The Congress will be held at the Brighton Centre, Brighton Metropole and Grand Hotel, Brighton. Please see Scientific Programme Timetable for location of Symposia, Workshops and Poster Discussion Groups.

A map of Brighton showing the location of the Congress venues is given on the inside back cover.

The venues are close to each other in Kings Road on the seafront, in the heart of the town and within easy walking distance of the major hotels.

The hotels at which some of the participants are staying are listed on page 8.

REGISTRATION BUREAU

The Registration Bureau will be open as follows:

Sunday 16 July	0930-2030
Monday 17 - Thursday 20 July	0800-1730
Friday 21 July	0800-1400

In addition, those needing assistance regarding the Poster Discussion Groups should contact Registration Staff in the following areas:

Brighton Metropole Churchill Room	1530-1730 Monday 17- Thursday 20 July
Grand Hotel Consort Room	1530-1730 Monday 17- Thursday 20 July

SECURITY

In the interests of personal safety strict security measures will operate.

Participants must wear their lapel badges at all times in the Congress venues. Admission to the Scientific Sessions will be refused to any participant not complying with this procedure. In your own interest we advise you to remove your lapel badge whilst walking outside the confines of the Congress venues.

There are no facilities for storing luggage at the Brighton Centre. Arrangements have been made at all the Congress hotels for luggage to be stored there if necessary.

Participants may be subject to bag searches and the Organising Committee apologise for any inconvenience this may cause.

TELEPHONES AND MESSAGES

Public telephones (for outgoing calls only) are situated on the Ground Floor and First Floor of the Brighton Centre. Change for the telephones may be obtained from the Congress Information Desk. Phonecards may be purchased from the Brighton Centre Kiosk on the Ground Floor. Messages may be left at the Congress Information Desk or received by telephone on 0273 720251. These will be displayed on the Message Board on the Ground Floor Foyer.

08 JAN 91

GENERAL INFORMATION

CATERING

Vouchers have been provided for complimentary refreshment services in the Brighton Centre; other light snacks and drinks including alcohol are available at the following service points on payment of cash.

Ground Floor East Corridor - Brighton Centre
First Floor West Corridor - Brighton Centre
First Floor East Corridor - Brighton Centre
West Lounge Bar Lobby - Brighton Centre

Lunch will be available from 1300-1430 daily. Cash bars serving alcoholic drinks will be open from 1200-1800 on Sunday 16 July and 1030-1800 from Monday 17 July - Thursday 20 July.

BANKS AND SHOPS

Branches of all the major UK banks and a large and interesting selection of shops are to be found in Brighton. In particular participants may wish to visit the Antique shops in The Lanes - see map reference G on the inside back cover.

Banking hours are 0930-1530 Monday to Friday
Shopping hours are generally 0900-1730 Monday to Saturday

For more details regarding tourist information please contact the Information Desk on the Ground Floor, Brighton Centre.

MEDICAL ASSISTANCE AND FIRST AID

Any participant requiring medical attention or first aid should contact a member of the Registration Staff.

SCIENTIFIC PROGRAMME

The overall theme for the Congress is 'Basic Science in Toxicology'. The scientific programme will comprise one plenary lecture and two or three symposia each day, poster presentations, poster discussion groups and workshops. A Scientific Programme Timetable appears on page 10 and the full programme is given on pages 13 to 71.

The language of the Congress is English and simultaneous translations will not be provided.

PROCEEDINGS

The proceedings of the Congress will be published by Taylor & Francis Ltd. They will comprise the plenary lectures and symposia. A copy will be sent to each registered participant at no additional charge.

EXHIBITION

The Exhibition is located on the Ground Floor, East Corridor and in the Hewson Hall, First Floor of the Brighton Centre. A list of Exhibitors and a plan of the Exhibition appears on page 11 and 12 and the stand descriptions appear on page 72 to 77.

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SOCIAL PROGRAMME

The Organisers reserve the right to modify itineraries or cancel any part of the Social Programme, including tours, in any way they deem necessary.

Further information regarding all events can be obtained from the Social Programme Desk on the Ground Floor, Brighton Centre.

EVENING EVENTS

SUNDAY 16 JULY

Brighton Centre 1800-2030

All participants and registered accompanying guests are invited to join the Opening Ceremony to be held in the Main Hall, Brighton Centre.

1800 Opening Ceremony

Professor Donald S Davies
Chairman of the Executive Committee IUTOX '89
Mr David Melfor QC MP
Minister of State for Health
Dr. Peter Gehring
President of the International Union of Toxicology

1820 Programme of Music

To be played by the Band of the Grenadier Guards (by permission of
Major General B C Gordon-Lennox CM MBE The Lieutenant Colonel)
Director of Music: Major S A Watts RAM pm

Entry
Slow March
Quick March
Show Piece
Re-form
Concert

March Away
The Return

Salute to: ICTV

ICTVI

ICTV

March Off

British Grenadiers
Scipio
Smooth of London
The Saints
South Rampart Street Parade
Memories
Llanys Trombones
Post Horn Grahop
General Mitchell
When the Guards are on Parade

■ ■ ■ ■ ■
Cobalt Blue Sky

Italian Festival

Rule Britannia
Land of Hope and Glory
British Grenadiers

Traditional
Handel
arr Payne
arr Bowles
Baudes
Lloyd Webber
Tullamore
Koenig
R B Hall
Nicholls

Halton

arr Osler

Arne
Elgar
Traditional

1900-2030 Wine Reception in Main Hall

08 JAN 91

SOCIAL PROGRAMME

MONDAY 17 JULY

Brighton Centre 1915-2000

All participants and registered accompanying guests are invited to join the Civic Reception, held by courtesy of the Mayor of Brighton in honour of the Congress. The reception will be held in the Main Hall, Brighton Centre.

TUESDAY 18 JULY

Dinner Parties

Coach transportation has been arranged for each venue. PLEASE NOTE the coach will only display the appropriate reference number (S1 etc) and not the destination. Please check carefully before boarding.

S1 Goodwood House, Chichester 1900-2400 approx

Situated on 12,000 acres of parkland the 15th century house, built by James Wyatt, is the home of the Dukes of Richmond and Gordon. The house contains a magnificent collection of treasures including Casella's first painting of London. Dinner will be served in the splendid Ballroom and afterwards guests will be invited to tour the house.

Coaches will depart from the Brighton Centre at 1900.

Ticket: £45.00 inclusive. Dress: Jacket and tie.

S3 Fife Place Nr. Lewes 1900-2315 approx

Home of the Gage family since the 15th century. The original Tudor house was largely altered about 1790. It is very much a family home, situated under the steep northern slope of the South Downs, and contains an important collection of European and English Old Masters - also some fine Sevres china. Other items in the house should be of particular interest to American guests as a result of the marriage between General Gage, Commander-in-Chief of the British forces at the beginning of the War of Independence and Margaret Kemble of New Jersey. On arrival guests will be offered a drink in the Billiard Room followed by a tour of the house and dinner in the Great Hall.

Coaches will depart from the Brighton Centre at 1900.

Ticket: £42.00 inclusive. Dress: Jacket and tie.

WEDNESDAY 19 JULY

S6 GALA EVENING

Buffet supper, Dancing and Entertainment
1930-2330

This Regency style evening will be held in the Corn Exchange, Brighton. The Corn Exchange is only a short walk from the Brighton Centre and Congress Hotels. Please see map at the back of this Programme.

The Organisers regret that this event is now limited to the Corn Exchange. For information regarding visits to the Royal Pavilion please contact the Social Programme Desk on the Ground Floor, Brighton Centre.

Ticket: £35.00 includes an aperitif, buffet supper, dancing and entertainment.
Dress: Regency costume, or jacket and tie.

S8 Arundel Castle, Arundel 1815-2345 approx

This great castle, situated in magnificent grounds overlooking the River Arun, was built at the end of the 11th century. It has been the seat of the Dukes of Norfolk and their ancestors for over 700 years. The Castle was badly damaged in 1643 and underwent restoration in the 18th and 19th centuries. Contents include 16th century furniture and portraits by Van Dyke, Gainsborough, Reynolds and others. Dinner, which will be served in the Earl Marshall's Hall, will be preceded by a conducted tour of the castle and drinks in the Library.

Coaches will depart from the Brighton Centre at 1815.

Ticket: £42.00 inclusive. Dress: Jacket and tie.

SOCIAL PROGRAMME

S10 Michelham Priory, Alfriston 1900-2345 approx

The Organisers regret that the original venue of Dringillas has been changed.

Michelham Priory, near Hailsham, originally an Augustinian Priory which was founded in 1229, became a Tudor farmhouse in the 16th century. It was owned by the Sackville family from 1603 to 1894. The Priory, which contains period furniture, tapestries and a collection of musical instruments is surrounded by one of the largest moats in England and boasts a working watermill which grinds wholemeal flour.

Coaches will depart from the Brighton Centre at 1900.

Ticket: £13.00 inclusive Dress: Jacket and tie

TUESDAY

All tours depart from and return to the Brighton Centre.

MONDAY 16 JULY

11 09.30-17.00

ARUNDELL CASTLE AND THE WEALD AND DOWNLAND OPEN AIR MUSEUM

Arundel Castle, situated in the picturesque grounds overlooking the River Arun. The castle was built in the 14th century by Richard of Montgomery, Earl of Arundel. It has a museum of 16th and 17th century furniture, tapestries and a collection of musical instruments. In 1643, the castle was destroyed by the Parliamentary forces. The castle contains fine furniture, tapestries, clocks and paintings by such artists as Manly, Dyck, Cranbrook and Reynolds.

After lunch and a nearby picnic, the tour continues to The Weald and Downland Open Air Museum at Southwick, a collection of historic buildings saved from destruction. These include medieval houses, a 16th century house and a working watermill set in 30 acres of beautiful downland countryside.

Tickets: £25.50 NB This tour is suitable for children.

TUESDAY 18 JULY

14 09.30-17.00

BATMAN'S AND THE BUTTERFLY CENTRE

Batman's at Buryash was built in 1634 and was the home of Rudyard Kipling. It is now owned by the National Trust. Highlights include Kipling's Nobel Prize citation (1907), the first time an award for literature was won by an Englishman. The water mill has been restored and is set in a most attractive garden with flower beds and beautiful lawns. The surrounding countryside, with low undulating hills, is the scene of Packer's Book's Hill.

Before going on to the Butterfly Centre in Eastbourne, lunch will be at a local pub. Visitors to the Centre can enjoy a beautiful tropical glasshouse garden, a dining fire flying butterflies from all over the world. All stages of the butterfly's development can be observed and photographed.

Tickets: £25.00 NB This tour is suitable for children.

THURSDAY 20 JULY

18 09.30-17.00

PARHAM HOUSE AND GARDENS, ST MARY'S AT BRAMBER

Parham House, built in the 17th century is a peaceful Elizabethan house with an important collection of Elizabethan and Stuart portraits, fine furniture, carpets, tapestries and a profusion of rare needlework. There are eleven acres of gardens, including a four acre walled garden.

From Parham, through the grounds, and then on to St Mary's which is a magnificent Grade I medieval house, described as the 'Best late 16th century timber framing in Sussex'. Visitors will see the rare 16th century painted wall leather, fine panelled rooms and the unique trompe l'oeil 'Painted Room', dedicated to the visit of Queen Elizabeth I.

Ticket: £27.50

HOTELS

	Telephone STD Code for Brighton (0273)
The Alexandra Hotel (map ref E1), 42 Brunswick Terrace Hove.	202722
The Bedford Hotel (map ref F1), Kings Road, Brighton.	29744
Brighton Metropole Hotel (map ref F1), Kings Road, Brighton.	775432
Courtlands Hotel (map ref G1), The Drive, Hove.	731055
The Curzon Hotel (map ref F1), Cavendish Place, Brighton.	25788
Grand Hotel (map ref F1), Kings Road, Brighton.	21188
Kings Hotel (map ref F1), 139-141 Kings Road, Brighton.	820854
Langford's Hotel (map ref D1), Third Avenue, Hove.	738222
Norfolk Resort Hotel (map ref G1), Kings Road, Brighton.	738201
Old Ship Hotel (map ref F1), Kings Road, Brighton.	29801
Princes Hotel (map ref G1), 10-12 Grand Junction Road, Brighton.	23451
Queen's Hotel (map ref F1), 4-5 Kings Road, Brighton.	21222
*Ramada Renaissance Hotel (map ref G1), Kings Road, Brighton.	206700
Regency Hotel (map ref F1), 28 Regency Square, Brighton.	202690
Royal Albion Hotel (map ref G1), Old Steine, Brighton.	29202
Sackville Hotel (map ref D1), Kingsway, Hove.	736292
Sheriden Hotel (map ref G1), 64 Kings Road, Brighton.	23221
West Beach Hotel (map ref F1), 135 Kings Road, Brighton.	23161
*Re-named Hospitality Inn.	

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BUSINESS AND SATELLITE MEETINGS

BUSINESS MEETINGS INTERNATIONAL UNION OF TOXICOLOGY

These will take place during the Congress

DATE	TIME	LOCATION	PARTICIPANTS
Sunday 16 July	12.30-17.00	Kent Suite Brighton Metropole	IUTOX Executive Committee
Tuesday 18 July	20.00-22.30	Dorset Suite Brighton Metropole	Committee of Toxicology in Developing Countries
Wednesday 19 July	12.30-15.30	Norfolk Room Brighton Metropole	IUTOX General Assembly
Friday 21 July	13.00-15.00	Kent Suite Brighton Metropole	IUTOX Executive Committee

SATELLITE MEETINGS

Toxicity and Therapeutics of "Newer" Metals and Organometallic Compounds

24 July 1989
 University of Surrey, Guildford
 Organiser:
 Dr M Debrida and Dr A Taylor
 Robens Institute of Industrial and Environmental
 Health and Safety
 University of Surrey
 Guildford, Surrey GU2 5X4

Second International Conference on Practical In Vitro Toxicology

23-27 July 1989
 East Midlands Conference Centre
 University Park, Nottingham
 Organiser:
 Dr W E Parish
 Unilever Research and Engineering
 Environmental Safety Laboratory
 Colworth House, Sharnbrook, Bedford MK44 1LQ

4th International Symposium on Nephrotoxicity, Mechanisms of Nephrotoxicity - The Basis for Early Diagnosis, Modulation of Effects and Improved Therapeutic Management

23-28 July 1989
 University of Surrey, Guildford
 Organiser:
 Dr P H Bach
 Robens Institute of Industrial and Environmental
 Health and Safety
 University of Surrey, Guildford, Surrey GU2 5X4

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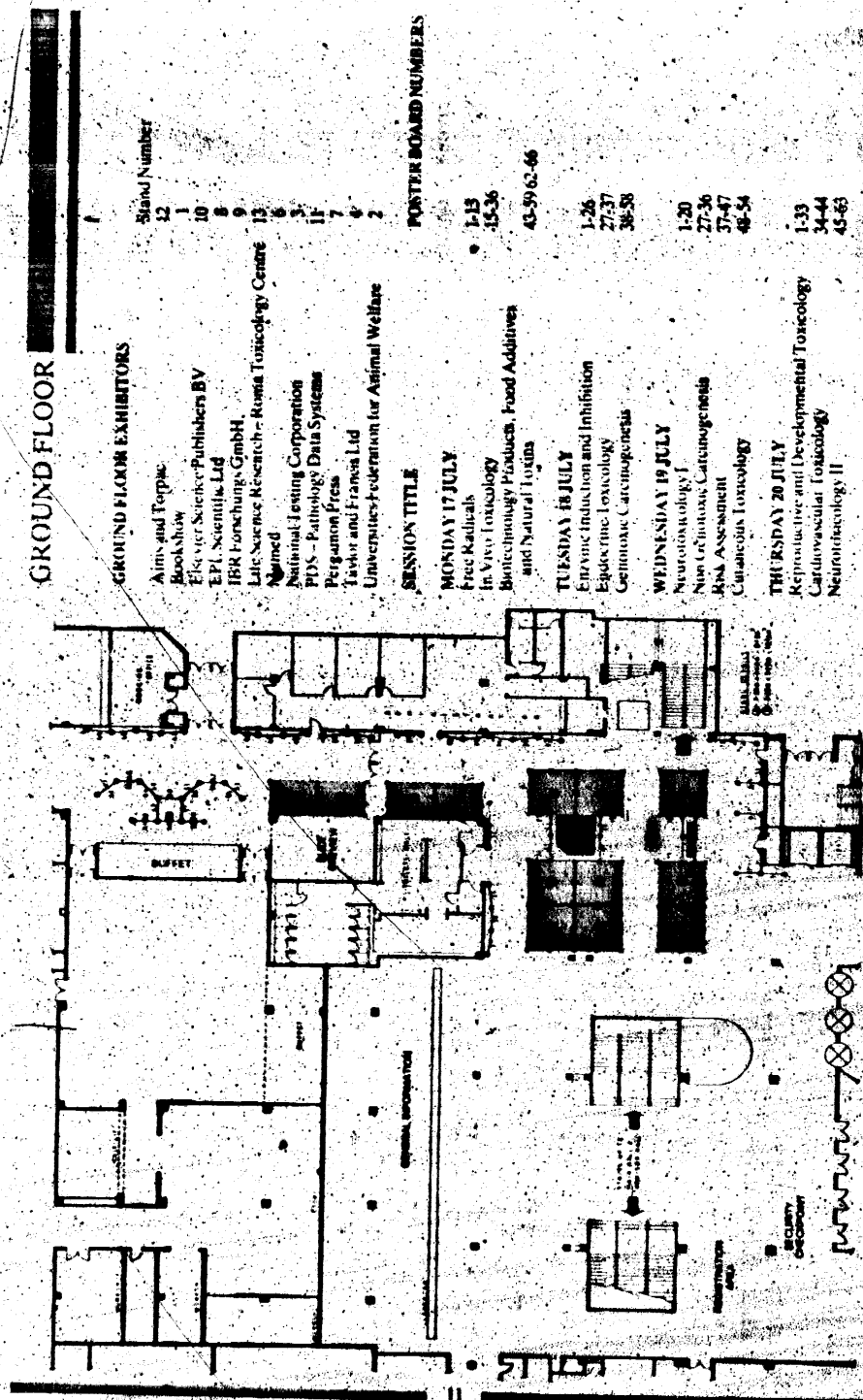
SCIENTIFIC PROGRAMME

SCIENTIFIC PROGRAMME TIMETABLE

0845-1145	1200-1300	1430-1600	1430-1730	1600-1730	2000
Monday 17 July BRIGHTON CENTRE Symposium 1	Plenary Lecture	Poster Presentations	Symposium 2	Poster Discussion Groups	
GRAND HOTEL				Poster Discussion Groups	
METROPOLE HOTEL				Poster Discussion Groups	Workshops
0845-1145	1200-1300	1430-1600	1430-1730	1600-1730	2000
Tuesday 18 July BRIGHTON CENTRE Symposium 3	Plenary Lecture	Poster Presentations	Symposium 5	Poster Discussion Groups	
GRAND HOTEL				Poster Discussion Groups	
METROPOLE HOTEL				Poster Discussion Groups	Workshops
Symposium 4					
0845-1145	1200-1300	1430-1600	1430-1730	1600-1730	2000
Wednesday 19 July BRIGHTON CENTRE Symposium 6	Plenary Lecture	Poster Presentations		Poster Discussion Groups	
GRAND HOTEL				Poster Discussion Groups	
METROPOLE HOTEL				Poster Discussion Groups	
Symposium 7					
0845-1145	1200-1300	1430-1600	1430-1730	1600-1730	1730
Thursday 20 July BRIGHTON CENTRE Symposium 8	Plenary Lecture	Poster Presentations	Symposium 9	Poster Discussion Groups	
GRAND HOTEL				Poster Discussion Groups	
METROPOLE HOTEL				Poster Discussion Groups	Workshops
Debate					
0845-1145	1130-1230	1230-1300			
Friday 21 July BRIGHTON CENTRE Symposium 10	Plenary Lecture	Chair of Congress			
METROPOLE HOTEL					
Symposium 11					

08 JAN 91

GROUND FLOOR



GROUND FLOOR EXHIBITORS

Exhibitor	Stand Number
Aim and Torpie	12
Bookshow	1
Elsevier Science Publishers BV	10
EPL Scientific Ltd	8
IRK Forschungs GmbH	9
Late Science Research - Roma Toxicology Centre	13
Marmed	6
National Testing Corporation	5
PDS - Pathology Data Systems	11
Pergamon Press	7
Taylor and Francis Ltd	4
Universities Federation for Animal Welfare	2

SESSION TITLE

MONDAY 17 JULY

Free Radicals	1-19
In Vivo Toxicology	15-36
Biotechnology Products, Food Additives and Natural Toxins	43-50, 62-66

TUESDAY 18 JULY

Enzyme Induction and Inhibition	1-26
Epigenetic Toxicology	27-37
Genotoxic Carcinogenesis	38-58

WEDNESDAY 19 JULY

Neurotoxicology I	1-20
Non-Genotoxic Carcinogenesis	27-36
RNA ASSOCIATION	37-47
Cardiac Toxicology	48-54

THURSDAY 20 JULY

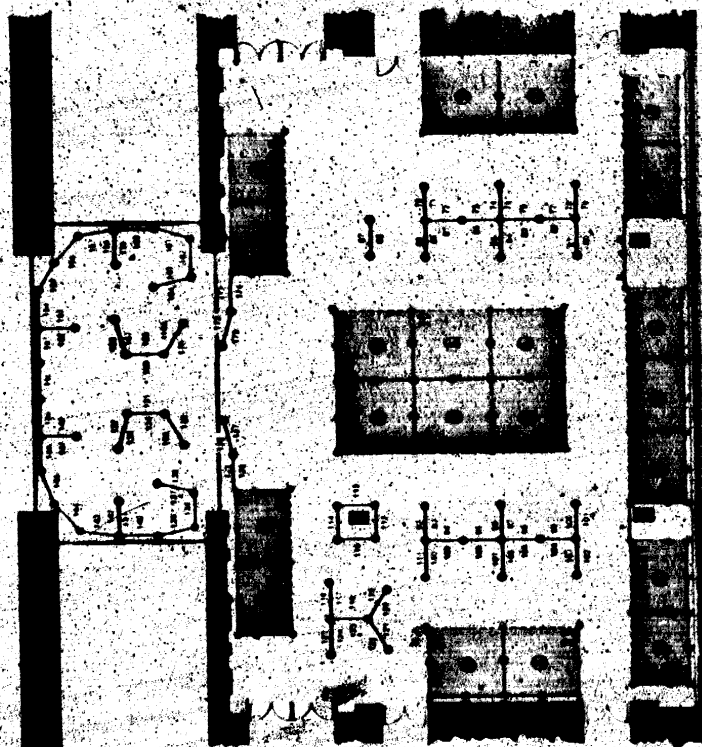
Reproductive and Developmental Toxicology	1-33
Cardiovascular Toxicology	34-44
Neurotoxicology II	45-63

POSTER BOARD NUMBERS

2501646069

FIRST FLOOR

FIRST FLOOR EXHIBITORS	STAND NUMBERS	POSTER BOARD NUMBERS
Apoteco Ltd	22	
BIBRA	15	
Charles River UK Ltd	19	
Craver Williams (Data Systems) Ltd	33	
Hazleton Laboratories UK	27 & 28	
Huntingdon Research Centre Ltd	23 & 24	
Innovative Programming Associates/Labcat	17	
Indem Computer Systems Ltd Datatex	25	
Inveresk Research International	31 & 32	
John Wiley and Sons Ltd	21	
Litt Science Research	29 & 30	
RBM, Institut für Recherche Biomedische	34	
RCC Group	26	
Scantox AS	16	
Shon Nippon Homoeopathic Laboratories Ltd	18	
Toxicol Laboratories Ltd	14	
UNOBV	20	
SESSION TITLE		
MONDAY 17 JULY		
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TUESDAY 18 JULY		
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WEDNESDAY 19 JULY		
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THURSDAY 20 JULY		
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Xenobiotic Metabolism	91-125	
Heavy Metals	126-153	
Pesticides	154-172	
In Vivo and In Vitro Genotoxicity		



08 JAN 91

MONDAY 17 JULY

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0845-1145

SYMPOSIUM 1 Brighton Centre

**The contribution of metabolic studies to the
assessment of the toxicity of xenobiotics**

Joint Symposium with the International Society for
the Study of Xenobiotics (ISSX)

Chairmen: R.L. Smith (London, UK) and A.R. Boobis (London, UK)

- Abstract**
- 0845-0920 1 Metabolic and kinetic criteria for the assessment of reproductive hazard
R A Ford (Englewood Cliffs, USA)
- 0920-0955 2 *In vitro* metabolic kinetics in risk assessment
T Green (Macclesfield, UK)
- 0955-1030 3 Metabolic and kinetic criteria in the safety evaluation of racemic
substances
J Caldwell (London, UK)
- 1030-1105 4 Critical metabolic and kinetic criteria for the safety evaluation of
recombinant proteins
S V Pizzo, M Gonzalez-Gronow, J M Edelberg, A E Masz &
G Salvén (Durham, USA)
- 1105-1140 5 Toxicological implications of enzymatic control of reactive metabolites
F Oesch, J Dohner, T Friedberg, H R Glau, B Oesch-Barlomowicz,
K L Platt, P Steinberg, D Utesch & H Thomas (Mainz, FRG)

1200-1300

DEICHMANN LECTURE Brighton Centre

Chairman: I F H Purchase (Macclesfield, UK)

**The molecular basis for inherited susceptibility to,
and action of, carcinogens**

D G Hamden (Manchester, UK)

MONDAY 17 JULY

1300-1430

LUNCH Brighton Centre

1430-1730

SYMPOSIUM 2 Brighton Centre

Toxicological science and risk assessment**Joint Symposium with the International Union for
Pure and Applied Chemistry (IUPAC)****Chairmen:** P Grandjean (Odense, Denmark) and P J Gehring (Midland, USA)**Abstract**
1430-1505 6Qualitative and quantitative differences in the toxicity of chemicals to various species of animals
R Jung (Frankfurt/Main, FRG)

1505-1540 7

Molecular dosimetry in clinical and experimental studies
P B Farmer (Cardiff, UK)

1540-1615 8

Correlation of risks predicted from animal data with human epidemiological experience
O Axelsson (Linköping, Sweden)

1615-1650 9

Scientific basis of risk assessment and biological monitoring for organophosphorus-induced delayed polyneuropathy
M Lotti (Padova, Italy)

1650-1725 10

Risk assessment from postmarketing surveillance of medicines
M D Rawlins (Newcastle upon Tyne, UK)

MONDAY 17 JULY

M
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1430-1600

POSTER PRESENTATIONS. Brighton Centre
Numbers in parentheses indicate poster boards

1600-1730

POSTER DISCUSSION GROUPS
Brighton Metropole and Grand Hotels

FREE RADICALS (Abstracts 11-23)

Chairmen: J A Castro (Villa Martelli, Argentina) and H J Forman (Los Angeles, USA)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Albert Room, Grand Hotel

Abstract

- 11 (P1) The effect of tamoxifen citrate and toremifene citrate on lipid peroxidation, antioxidant enzymes and xenobiotic metabolising enzymes in rat liver
M Ahotupa & P Hirsimäki (Turku, Finland)
- 12 (P2) Emoxipin: an inhibitor of free radical oxidation. Studies of toxicity
T A Guskova, A B Volkov & L D Smirnov (Moscow, USSR)
- 13 (P3) Hepatocyte cytoskeleton as a target for oxygen free radicals
F Mirabelli, M Varetto, P Ruchini & G Bellomo (Pavia, Italy)
- 14 (P4) Cigarette smoke potentiates the DNA damaging effect of man-made mineral fibres
P Lennander & C Tagesson (Linköping, Sweden)
- 15 (P5) One electron reduction of 2,3,5,6-tetramethylquinone by rat liver cytochrome P450
A R Goepfer, J M S van Maanen, C Zoetenick & N P E Vermeulen (Amsterdam, The Netherlands)
- 16 (P6) Elevated ethane production in acrylonitrile (AN) treated rats
V Ivanov (Krasnoyarsk, USSR & Brussels, Belgium)
- 17 (P7) Metal induced lipid peroxidation
H R Andersen & O Andersen (Odense, Denmark)
- 18 (P8) Reductive activation of trinitrotoluene (TNT) induced by rat liver microsomes and mitochondria
Z X Zhuang, S F Liu & Q G Jiang (Beijing, China)
- 19 (P9) Biotransformation of carbon tetrachloride and lipid peroxidation promotion by liver nuclear preparations from different animal species
G Castro, M Díaz Gómez & J Castro (Villa Martelli, Argentina)
- 20 (P10) Dimethylsulphide formation during trichloromethyl free radical attack on methionine
G Castro, M Díaz Gómez & J Castro (Villa Martelli, Argentina)

MONDAY 17 JULY

FREE RADICALS (cont)

Abstract

- 21 (P11) Modulation of the lindane-induced liver oxidative stress by phenobarbitone, 3-methylcholanthrene and lindane
S Barros, K Simizu, R Pimentel, L A Azzalis, O R Koch, L A Videla & V B C Junqueira (São Paulo, Brazil; Buenos Aires, Argentina; Chile)
- 22 (P12) Lipid peroxidation may be involved in DDT induced liver damage
S Barros, L A Azzalis, R Pimentel, I S C da Silva, M N N Burnier Jr, K Simizu & V B C Junqueira (São Paulo, Brazil)
- 23 (P13) Liver lipid peroxidation related parameters after short-term hexachlorocyclohexane isomers administration to rats
S Barros, K Simizu & V B C Junqueira (São Paulo, Brazil)

IN VIVO TOXICOLOGY (Abstracts 24-45)

Chairmen: C E Lumley (Carshalton, UK) and H P A Illing (Bootle, UK)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Edinburgh Room, Metropole Hotel

- 24 (P15) Influence of two different adsorbent agents on the thrombogenicity of prothrombin complex concentrates
H P Klöcking, R Wolkow & G Dornheim (Erfurt & Suhl, GDR)
- 25 (P16) Oxidation damage of TNT acute administration to rat erythrocytes and its effects on liver sulphhydryl and Cu²⁺ homeostasis
Z X Zhuang, Q G Jiang & S J Liu (Beijing, China)
- 26 (P17) A comparison of techniques for obtaining terminal blood samples from mice for routine toxicological assessment
J A Osburne (Stuck, UK)
- 27 (P18) Macroautoradiography and quantitative considerations
N Motoji, E Hayama, A Shishido, A Shigematsu, J Miyahara & H Shimizu (Chiba & Ashigarakami-gun, Japan)
- 28 (P19) Sub-acute oral toxicity study with a combination of eight chemicals in rats
D Jonker, R A Woutersen, P J van Bladeren, H P Tijl & V J Feron (Zeist, The Netherlands)
- 29 (P20) Model for screening effects of drugs on haemopoietic tissues
M L S Queiroz (Campinas, Brazil)
- 30 (P21) Determination of nicotine and its metabolite cotinine in urine by gas chromatography
N Yural & B C Eke (Ankara, Turkey)

MONDAY 17 JULY

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IN VIVO TOXICOLOGY (cont)

Abstract

- 31 (P22) Effects of long term administration of phosphates on the liver, kidneys, muscles, bone, inorganic elements and $1,25(\text{OH})_2\text{D}_3$ in the serum of mice
M Omoto, T Imai, K Seki, R Nomura, M Motegi & T Harada (Tokyo, Japan)
- 32 (P23) TCDD resistance is inherited as an autosomal dominant trait in the rat
R Pohjanvirta & J Tuomisto (Kuopio, Finland)
- 33 (P24) Regulations for animal toxicity testing: harmonisation by 1992?
I S Speid, C E Lumley, S R Walker & D K Luscombe (Cardiff & Cardiff, UK)
- 34 (P25) Is there a need for a second species in long term toxicity testing?
I S Speid, C E Lumley, S R Walker & D K Luscombe (Cardiff & Cardiff, UK)
- 35 (P26) The value of an international toxicology data base
C E Lumley & S R Walker (Cardiff, UK)
- 36 (P27) The significance of laboratory animals' individual status for drug toxicological testing
I Berezovskaya, V Trepakov, V Rymartsev & V Shulman (Moscow, USSR)
- 37 (P28) Lithium-propranolol toxicity in Balb/c mice: chronopharmacological aspects
Z Z Bojancic, V V Bojancic & V M Lazovic (Nis, Yugoslavia)
- 38 (P29) Ranitidine prevented increase in gastrin serum levels in male Wistar rats treated with subcutaneously administered benzene
Z Z Bojancic, V V Bojancic & Z Stankovic (Nis, Yugoslavia)
- 39 (P30) Influence of smoking with hookah on cadmium level in hair
A Sukumar & R Subramanian (New Delhi, India)
- 40 (P31) Chronic evaluation in the mouse to a microchip implant used for animal identification
M I Goudy, N Pickersgill, N Shepherd, D Haida & P E Bethamley (Harrogate, UK)
- 41 (P32) Evaluation of the acute toxicity and anti-inflammatory activity of N-[4-(2,6-dimethylpiperidinyl)-2-butynyl]phthalimide hydrochloride in mice and rats
E A Hassen, W Al-Hassan, Nihal Al-Gray & Z M El-deen (Baghdad, Iraq)
- 42 (P33) Toxicological studies with Pentosan polysulphate
H P Klocke & W Seifner (Jena, GDR)
- 43 (P34) Induction of the generalised Shwartzman reaction with antibiotics: effects of endotoxin produced by bacteria treated with antibiotics on a living body
T Nagai, T Ikeda, M Sato & Y Miura (Sagamihara-shi & Tokyo, Japan)
- 44 (P35) Effects of fatty acid amides (FAA) on the haemolysis in young rats
H Ichikawa & T Ueta (Tokyo, Japan)
- 45 (P36) A new aspect for the toxic process being an aetiological cause for diseases, their prophylaxis and treatment
D Lefkov & K Kanev (Sofia, Bulgaria)

MONDAY 17 JULY

BIOTECHNOLOGY PRODUCTS, FOOD ADDITIVES AND NATURAL TOXINS (Abstracts 46-67)

Chairmen: E E Creppy (Strasbourg, France) and J Caldwell (London, UK)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Gloucester Room, Grosvenor Hotel

Abstract

- 46 (P43) Some questions of methodology of experimental studies of the safety of drugs developed by methods of genetic engineering
Y Burov, A Torchinsky & A Kinzinsky (Moscow, USSR)
- 47 (P44) Food safety assessment for use of Somatotrope to increase efficiency of milk production in dairy cows
B Hammond, W Vandaele, F Johannsen & T Harvey (St Louis, USA & Brussels, Belgium)
- 48 (P45) The preclinical safety evaluation of human anti-cytomegalovirus monoclonal antibody
K Matsuzawa, T Koyama, Y Matsumoto, S Sugawara, S Asano, S Sasaki, K Sunagawa, Y Masuho & T Makita (Tokyo, Japan)
- 49 (P46) The subacute toxicity of human recombinant interleukin-2 in the cynomolgus monkey
R J Tudor, A K Rushion, T D Anderson, T J Hayes & B Rushion (Welwyn Garden City, UK & Nulley, USA)
- 50 (P47) Molecular cloning and expression of *Staphylococcus aureus* strains 015 toxin gene in *E. coli*
D Meshveliani, R Adams, I Kvachadze, R Vashakidze & N Mamulashvili (Tbilisi, USSR)
- 51 (P48) Lack of genotoxicity of Ac-Di Sol[®] in mutagenicity and *in vivo* cytogenetics tests
M L Weiner, D E Putman, K Butt & M J Fletcher (Princeton & Rockville, USA)
- 52 (P49) Acute toxicity of carrageenan
M L Weiner, C Freeman, J D McCarty & M J Fletcher (Princeton, USA)
- 53 (P50) Potential weekly intake of artificial food colours by 3-14 year old children
M C Toledo, M S Guerchon & S Ragazzi (Campinas, Brazil)
- 54 (P51) Effect of dose size upon the metabolism of the mouse-specific peroxisome proliferator cinnamyl anthranilate (CA) in the mouse
F Keyhanfar & J Caldwell (London, UK)
- 55 (P52) A comparative study of the hepatic effects of cinnamyl esters in mice
J Caldwell & A Viswalingam (London, UK)
- 56 (P53) Toxicity of anethole in cultured primary hepatocytes
A D Marshall, A J Howes & J Caldwell (London, UK)
- 57 (P54) Structure-specificity of the genotoxicity of allylbenzene congeners
A J Howes, V S W Chan & J Caldwell (London, UK)

MONDAY 17 JULY

MONDAY

BIOTECHNOLOGY PRODUCTS, FOOD ADDITIVES AND NATURAL TOXINS
(cont)

Abstract

- 58 (P55) An evaluation of the use of ELISA in the detection of aflatoxins in human urine
K Makarananda & G E Neal (Garshalon, UK)
- 59 (P56) Ochratoxin A is a substrate for phenylalanine hydroxylase in rat
E F Creppy, K Chakor, M J Fister & G Dithemer (Strasbourg, France & Liverpool, UK)
- 60 (P57) Changes in body and organ weight and histological derangements in the spleen of rats fed upon *Aspergillus niger* infected diet
V Tiwari & R K S Chaudhan (Gwalior, India)
- 61 (P58) Isolation of toxic constituents from bracken rhizomes
T Saito, K Takano, J Kawano & Y Umano (Ehime, Japan)
- 62 (P59) Association of the cause of death due to monatoxin
C Y Lee, W W Lin, Y M Chen, S Y Lee & T Yasumoto (Taipei, Taiwan & Sendai, Japan)
- 63 (P62) Phospholipase A₂ as the lethal factor of the honey bee venom
C L Ho & L L Hwang (Taipei, Taiwan)
- 64 (P63) Actions of the lethal polypeptide neurotoxin from male *Atrax robustus* spider venom, and protection by immunisation with a toxoid
E J Mylecharane, I Spence, C A Phillips, D D Shearnack, M R Brown, A Conus & M E H Howden (Sydney & Geelong, Australia)
- 65 (P64) Isolation of toxin causing root rot resistant lines in maize through tissue culture
R P Singh (Varanasi, India)
- 66 (P65) The effect of 3 substituted furans, ngarone and mycophenolate on hepatic glutathione S-transferase activity in mice
J Hudec, P A Nichols, A A Seawright & J T Ahokas (St Lucia & Melbourne, Australia)
- 67 (P66) Relationship between toxicity and deoxy acid in blue mussel (*Mytilus edulis*)
M S Nijjar, B Grinnell, J Brown, N MacNair, S Wagner, G Johnson & J F Amend (Charlottetown, Canada)

MONDAY 17 JULY

RENAL TOXICOLOGY (Abstracts 68-88)

Chairmen: P M Tulkens (Brussels, Belgium) and H Endou (Tokyo, Japan)

Posters will be displayed in the Hamilton Hall. The Discussion Group will be held in the Balmoral Room, Metropole Hotel

Abstract

- 68 (P69) Development of a primary culture of rat renal proximal tubular cells as an *in vitro* system to study nephrotoxicity
P J Boogaard, J P Zoetewij, G J Mulder, & J F Nagelkerke (Leiden, The Netherlands)
- 69 (P70) Cytotoxicity of cysteine-S-conjugates in rat renal proximal tubule cells: structure-activity relationships
A Kochling, S Vamsakas, M Knob, K Berthold, W Deklun, & D Henschler (Wurzburg, FRG)
- 70 (P71) The disturbance of calcium metabolism in kidney induced by Cd-metallothionein
T Jin, P Leffler, & G Nordberg (Umeå, Sweden)
- 71 (P72) Application of proton NMR analysis to the examination of nephrotoxic lesions induced in rats by seven region specific nephrotoxins
K P R Gartland, E Holmes, & J K Nicholson (London, UK)
- 72 (P73) Nephrotoxicity assessment by measuring cellular ATP contents in isolated rat nephron segments
H Endou & K Y Jung (Tokyo, Japan)
- 73 (P74) Effects of ochratoxin A on [³H]-haloperidol binding to renal cortical membranes from rats and phenobarbitone treatment
N Ozaki, S Suzuki, & K Moroi (Ishikawa & Chiba, Japan)
- 74 (P75) Sub-acute toxicity of phenazopyridine in the kidney of the rat
B H Thomas, R W Muehler, C J Paul, & G Solorzano (Ottawa, Canada)
- 75 (P76) *In vitro* studies on anionic polypeptides as protectants against aminoglycoside-induced nephrotoxicity
B K Kishore, P Lamberti, G Laurent, & P M Tulkens (Brussels, Belgium)
- 76 (P77) Electron microscopic and immunohistochemical study on the regeneration of proximal tubular cells in rat kidney after treatment with gentamicin
T Yamoto, M Takawa, T Igarashi, N Matsunuma, & H Masuda (Shizuoka, Japan)
- 77 (P78) Cisplatin induced injury in cultured renal epithelial cells
M Grempe & N Fukushima (Osaka, Japan)
- 78 (P79) *Bis*- and *tris*-(2,3-dibromopropyl)phosphate (BP) induced nephrotoxicity in rats and carcinogenicity of *bis* BP
K Kubayashi, M Fukuoka, K Naito, K Takaki, A Tanaka, & M Tobe (Shizuoka & Tokyo, Japan)
- 79 (P80) Abnormal excretion of urinary electrolytes in the newly established congenital hydronephrosis rat
K Tauchi, I Katsuki, N Sunouchi, & T Iinuma (Niihara-gun, Japan)

MONDAY 17 JULY

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RENAL TOXICOLOGY (cont)

Abstract

- 80 (P81) Hypertension observed in the newly established congenital hydropsphrosis rat
K. Tsuchi, S. Toyohara, I. Karashi & T. Imanishi (Nihari-gun, Japan)
- 81 (P82) Renin-angiotensin system in chronic occupational and experimental exposure to lead
M. Cammignani, P. Boscolo & P. Preziosi (L. Aquila & Rome, Italy)
- 82 (P83) Escalation and quantification of renin in kidney sections of rats and dogs
N. Reed, A. Brito-Babapulle, S. McWann, P. Rhodes & B. Jeffrey (Beckenham, UK)
- 83 (P84) Two methods for the assessment of proteinuria in rats following the intraperitoneal administration of egg white lysine
G. Evans & C. Parsons (Beckenham, UK)
- 84 (P85) Chronic glomerulonephropathy and rising density in male Wistar rats
R. P. Jones, A. H. Pulsford & M. J. Tucker (Macclesfield, UK)
- 85 (P86) Organ-specific metallothionein induction in mice by X-irradiation or cisplatin treatment
J. Koropatnick, M. L. F. LeBlond & M. G. Charlier (London, Canada)
- 86 (P87) The effect of ketolactone and beta-lactone cyclo-oxygenase conjugates on glutathione reductase and superoxide dismutase activities
D. A. Jack (Macclesfield, UK)
- 87 (P88) A new method for the evaluation of nephrotoxicity of drugs and environmental chemicals in rats. Subject-derived urinary albumin determined with the help of monoclonal antibodies as indicators for kidney damage and damage in the rat experimental animal model
F. W. Follmann, B. D. Lohr, G. L. B. Dornier, B. Dornier & W. Wapner (FRG)
- 88 (P89) Determination of cytosolic calcium (Ca^{2+}) in toxic cell injury: studies using digital imaging fluorescence microscopy (DIFM)
R. F. Young, J. K. Barcenas, M. W. Smith, P. C. Phelps, N. Nita, K. A. Elliger & J. J. Barcenas (USA)

HEPATOTOXICOLOGY I (Abstracts 89-108)

Chairmen: I. G. Sipes (Tucson, USA) and F. W. Barter (Aldwick, UK)

Papers will be displayed in the Harrison Hall. The Discussion Group will be held in the Buckingham Room, Metropole Hotel.

- 89 (P92) Hepatotoxicity of bile salts
T. G. Hammond, R. Colclough, D. Smith & B. Clark (Loughborough, Birmingham & Sandwich, UK)
- 90 (P93) Continuous monitoring of phagocytic activity of Kupfer cells in the perfused rat liver: development and application of a new method to hepatotoxicity
J. M. de Maessene, J. J. Lemstra & G. Thunnissen (Chapel Hill, USA)

MONDAY 17 JULY

HEPATOTOXICOLOGY 1 (cont)

Abstract

- 91 (P94) A new method to monitor fluorescent labeling of endothelial cells during exposure to hepatotoxins in perfused rat livers
P E Galey, J J Lemasters & R G Thurman (Chapel Hill, USA)
- 92 (P95) Modulation of dichloropropane (DCP) toxicity in rats by agents affecting tissue glutathione (GSH) level
R Imberti, P Richelmi, F Berte, F Mirabelli & G Bellomo (Pavia, Italy)
- 93 (P96) Vitamin potentiation of hepatotoxicity following repeated exposure to carbon tetrachloride
I G Sipes, S A Mobley, V Lim & D Earnest (Tucson, USA)
- 94 (P97) Neutrophil accumulation exacerbates acetaminophen-induced liver injury
H Joeschke & J R Mitchell (Houston, USA)
- 95 (P98) Effect of buthionine sulfoximine on the acetaminophen-induced lethality in mice. Preventive role of anethole dithiolthione pretreatment
J-M Warter, M O Christon, M Thievent, C Marini, J Cebron & J-R Claude (Paris & Suresnes, France)
- 96 (P99) Characterisation of the major acetaminophen (APAP) binding proteins.
E A Khairallah, J B Bartolone, R B Burge, M K Bruno, E V Nishanian, & H Khairallah & S D Cohen (Storrs, USA)
- 97 (P100) Chloroquine pretreatment but not murex or phenobarbitone, inhibits Reuber hepatoma cell division upon exposure to CCl_4 .
H M McEandale & S D Ray (Jackson, USA)
- 98 (P101) Plasma alanine aminotransferase measurements in two models of hepatotoxicity in rats
G D Evans (Buckingham, UK)
- 99 (P102) The effects of conventional DPT and acellular DPT on hepatic drug metabolism
T-Y Jia, C-W Ch & C-Y Lin (Taipei, Taiwan)
- 100 (P103) The effect of ethacrynic acid (EA) on sulphamonomethoxazole (SMP) excretion
S L Fching & J T Abbas (Melbourne, Australia)
- 101 (P104) The effect of EA on SMP excretion in the isolated perfused rat liver
S L Fehring & J T Abbas (Melbourne, Australia)
- 102 (P105) The influence of metabolism on the site of BHT-induced hepatotoxicity
A K Connolly & C J Powell (London, UK)
- 103 (P106) A histopathological study of factors modifying the pattern of BHT-induced liver damage
C J Powell & A K Connolly (London, UK)
- 104 (P107) Comparative hepatotoxicity of cyproflorazone and bezafibrate in the Fischer rat following dietary or oral gavage administration for 26 weeks
M J Graham, S Halligan, M Winkler & F W Bonner (Aintree, UK)
- 105 (P108) Species specific histopathological findings observed in beagle dogs
H Wetzand, M Sumaga, H Morita & T Yanagita (Kawasaki, Japan)

MONDAY 17 JULY

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HEPATOTOXICOLOGY I (cont)

Abstract

- 106 (P109) Early ultrastructural changes in liver and kidney parenchyma of rats poisoned with *Acarosyringium* L.
A Hedili, L. Keates, J-M. Warrat, N. Ben Salah, H. Jaafoura, M. Thirenia, M. Amamou, Z. Jerbi, J-R. Chade & M. Yacoub (Tunis, Tunisia & Paris, France)
- 107 (P110) Competition between acetaldehyde and prostaglandins for hepatocyte receptors: possible mechanism of hepatotoxicity and hepatoprotection
V. Buko & I. Zavodnik (Grodno, USSR)
- 108 (P111) Alteration of hepatic gene expression patterns following *in vitro* and *in vivo* exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)
Y. Aoki, E. K. Silbergeld & B. A. Fowler (Baltimore, USA)

XENOBIOTIC METABOLISM AND KINETICS

(Abstracts 109-134)

Chairmen: T. R. Fennell (Research Triangle Park, USA) and G. A. S. Ansari (Galveston, USA)

Posters will be displayed in the Hawtson Hall. The Discussion Group will be held in the Empress Room, Grand Hotel.

- 109 (P137) Kinetic procedures for estimating organ clearances of formation of short-lived chemically reactive metabolites
J. R. Gillette & R. Chen (Bethesda, USA)
- 110 (P138) Urinary metabolites of $[1,2,3-^{13}C]$ acrylonitrile in the rat and mouse detected by ^{13}C nuclear magnetic resonance spectroscopy
T. R. Fennell, S. D. Held & G. L. Kedderis (Research Triangle Park, USA)
- 111 (P139) Nephrotoxicity of dichloroacetylene in rats: *in vivo* evidence for activation by glutathione conjugation reactions
W. Kannal, W. Eckert & D. Henschler (Würzburg, FRG)
- 112 (P140) Intestinal absorption and metabolism of trichloroethylene in the closed loop system of dogs
T. Hoshino, H. Kobayashi & K. Ogino (Ube, Japan)
- 113 (P141) Metabolism of the progestogen norgestrel by human liver microsomes
S. Madden & D. J. Back (Liverpool, UK)
- 114 (P142) The use of 1H and ^{15}N NMR to investigate the metabolism of ^{15}N -aniline
K. E. Wade, I. D. Wilson & J. K. Nicholson (London & Macclesfield, UK)
- 115 (P143) Biliary excretion and metabolism of dalpropan (BM13,505/SK&F 96148) in the rat and dog
J. Kuo, D. Dulik, G. Joseph, M. Carbonaro, G. Kuo, K. Tyrell & E. Gmichen (King of Prussia, USA)

MONDAY 17 JULY

XENOBIOTIC METABOLISM AND KINETICS (cont)

Abstract

- 116 (P144) Species differences in metabolism of monohalogenated methanes
E Hallier, S Deutschmann, B Gansowendi & H Peter (Dortmund, FRG)
- 117 (P145) Interaction of ethanol on methyl ethyl ketone conversion to 2,3-butanediol in man
K Engström, J Liira & V Riihimäki (Turku & Helsinki, Finland)
- 118 (P146) Tissue distribution and metabolism of aflatoxin B₁ in the marmoset monkey
P Larsson & H Tjalve (Uppsala, Sweden)
- 119 (P147) The pharmacokinetics of CHISOIN-175 in the rat
F Lévy, I Szamari, S Fritsch & V Gergely (Budapest, Hungary)
- 120 (P148) Local tolerance and pharmacokinetics of a surgical cement containing gentamicin (Palavit-SCH-457) in beagle dogs
D Petra, J F le Bigot, R Glomot & P Assouly (Evreux & Levallois Perret, France)
- 121 (P149) Local tolerance and pharmacokinetics of gentamicin after surgical implantation of a sustained release substance (Chronoxal implant SCH-438) in beagle dogs
D Petra, J F le Bigot & R Glomot (Evreux, France)
- 122 (P150) Metronidazole plasma and saliva pharmacokinetics and metabolism in minipigs
S Loft, O Svendsen & H E Poulsen (Copenhagen & Skensved, Denmark)
- 123 (P151) Acetylsalicylic acid metabolism and plasma/saliva pharmacokinetics in minipigs
H E Poulsen, S Loft & O Svendsen (Skensved & Copenhagen, Denmark)
- 124 (P152) Paracetamol saliva and plasma pharmacokinetics and metabolism by minipigs
O Svendsen, S Loft & H E Poulsen (Skensved & Copenhagen, Denmark)
- 125 (P153) New application of radioreceptorometry in toxicokinetics
Y Momoie, I Nishigaki & A Shigematsu (Osaka, Japan)
- 126 (P154) Kinetics and toxicology of pyrazinoinolone derivatives in experimental study on different animal species
A Shchegolev, I Golovanova & S Sharova (Moscow, USSR)
- 127 (P155) Hydroxylase disposition in rat liver and plasma after various doses
N E Preter & J A Timbrell (London, UK)
- 128 (P156) Persorption: Do experimental problems prevent the unequivocal demonstration of this phenomenon?
J A Phillips & A D Dwyer (London, UK)
- 129 (P157) Interspecies scaling of trospicromycin sulphate pharmacokinetics
D J Nichols & A Bye (Crawley, UK)
- 130 (P158) Glucuronidation of *r*- and *s*-methanol in the rat
P J Eddersham, T Yamaguchi & J Caldwell (London, UK)
- 131 (P159) *In vivo* formation of fatty acid conjugates of 2-chloro- and 2-bromo-ethanol and role of microsomal ester hydrolase
G A S Ansari, H K Bhat & B S Kaphalia (Galveston, USA)

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MONDAY 17 JULY

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XENOBIOTIC METABOLISM AND KINETICS (cont)

Abstract

- 132 (P160) Metabolism of formosanin by cytochrome P450
C Y Huang & K Y Chou (Taipei, Taiwan)
- 133 (P161) Autoinduction of rifabutin metabolism in man
E Moro, M Sirolin Benedetti, A Fanfani & M G Jannuzzo (Milan, Italy)
- 134 (P162) An investigation of criteria for the initiation of cirrhosis in rats for pharmacokinetic and toxicity studies of xenobiotics in an hepatically impaired model
K E Tomaszewski, G C Harnes, F Avuru & P Jeffrey (Crawley, UK)

2000 **WORKSHOPS** Brighton Metropole Hotel

There are a limited number of places at each Workshop and admission is by pre-booked ticket.

- W1 TOXICOLOGY IN DEVELOPING COUNTRIES**
Balmoral Room
Organiser: B H Thomas (Ottawa, Canada)
- W2 THE INFLUENCE OF ANIMAL HUSBANDRY ON TOXICOLOGICAL STUDIES**
Buckingham Room
Organiser: R W James (Huntingdon, UK)
- W3 THE PRACTICAL USE OF SOME NEW ANTIDOTES: THE ROLE OF FLUMAZENIL AND DIGOXIN-SPECIFIC Fab FRAGMENTS**
Edinburgh Room
Organiser: J A Vale (Birmingham, UK)

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TUESDAY 18 JULY

0845-1145

SYMPOSIUM 3 Brighton Centre

Ecotoxicology - Relevance to society?

Chairmen: P J Peterson (London, UK) and J R Lawrence (Brixham, UK)

Abstract

- 0845-0920 135 The significance of ecotoxicology
P J Peterson (London, UK)
- 0920-0955 136 Aquatic ecotoxicology
J B Sprague (Guelph, Canada)
- 0955-1030 138 Chronic fish toxicity
G K Ostrander & D C Malins (Seattle, USA)
- 1030-1105 137 Laboratory to environment
N O Crussland (Sittingbourne, UK)
- 1105-1140 139 The role of ecotoxicology in environmental protection
D Calamari & M Vighi (Milan, Italy)

0845-1145

SYMPOSIUM 4 Brighton Metropole Hotel

The basis for selective toxicity in the lung

Chairmen: H Witschi (Davis, USA) and L L Smith (Macclesfield, UK)

- 0845-0920 140 Cell types and their importance in toxicology
H Witschi (Davis, USA)
- 0920-0955 141 Cell selective toxicity in the lung: role of metabolism
J R Bend, J K Horton, R Brigelius, L A Dostal, R P Mason &
C J Sarabjit-Singh (London, Canada & Research Triangle Park, USA)
- 0955-1030 142 The importance of epithelial uptake systems in lung toxicity
L L Smith (Macclesfield, UK)

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TUESDAY 18 JULY

The basis for selective toxicity in the lung (cont)

Abstract
1030-1105 143

Mechanisms of endothelial cell damage
P Moldéus & I A Cotgreave (Stockholm, Sweden)

1105-1140 144

Leukocytes, macrophages and active molecular species
H J Forman (Los Angeles, USA)

1200-1300

PLENARY LECTURE Brighton Centre

Chairman: A D Dayan (London, UK)

**The contribution of epidemiology to understanding
the mechanisms of action of carcinogens**

A J McMichael (Adelaide, Australia)

1300-1430

LUNCH Brighton Centre

1430-1730

SYMPOSIUM 5 Brighton Centre

**The importance of mechanisms of action for the
evaluation of environmental carcinogenic risk**

Joint Symposium with the International
Agency for Research on Cancer (IARC)

Chairmen: L Tomatis (Lyon, France) and I F H Purchase (Macclesfield, UK)

1430-1505 145

Molecular dosimetry, genetic susceptibility and cancer risk
C C Harris, D Munchesiger, H Sugimura, N Caporaso, R Hoover,
G Trivers, D Mano, J Mesau, B F Trump & A Weston (Beltsville &
Baltimore, USA)

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TUESDAY 18 JULY

The importance of mechanisms of action for the evaluation of environmental carcinogenic risk (cont)

- Abstract
- 1505-1540 146 DNA repair and its modulation of the carcinogenic response
M F Rajewsky, J Thomale, N Huh, P Nehls, G Eberle & K Sendowski, (Essen, FRG)
- 1540-1615 147 Oncogene activation and amplification in chemical carcinogenesis
M Terada, T Yoshida, J Yokota, H Sakamoto, Y Tsunokawa, Y Hattori, O Kathoh, M Mori & T Sugimura (Tokyo, Japan)
- 1615-1650 148 The role of cell-to-cell communication during multistage carcinogenesis
H Yamasaki (Lyon, France)
- 1650-1725 149 Non-genetic mechanisms of chemical carcinogenesis
J T Swenberg, S Boughoff, M Charbonneau & B Short (Chapel Hill & Research Triangle Park, USA)

1430-1600 **POSTER PRESENTATIONS Brighton Centre**
Numbers in parentheses indicate poster boards

1600-1730 **POSTER DISCUSSION GROUPS**
Brighton Metropole and Grand Hotels

ENZYME INDUCTION AND INHIBITION (Abstracts 150-174)

Chairmen: K J Neufert (Marburg, FRG) and R G Thurman (Chapel Hill, USA)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Empress Room, Grand Hotel

- 150 (P1) Relationship between chemical structure and cyt P450 inhibiting action of H₂ receptor antagonists
E Chiesara, L Marabini, G Reina & A Giachetti (Milan, Italy)
- 151 (P2) Kinetic and metabolic interactions of repeated inhalation exposure to methyl ethyl ketone, and *m*-xylene in rats
J L Hsu, V Kihumaki, H Kaunio & K Engstrom (Turku, Helsinki & Oulu, Finland)
- 152 (P3) 6-*n*-Propylchromone-2-carboxylic acid (PCCA): a probe for the stereoselectivity of alkyl hydroxylation
J P Darbyshire, S Winter & J Caldwell (London, UK)

TUESDAY 18 JULY

ENZYME INDUCTION AND INHIBITION (cont)

Abstract

- 153 (P4) Interaction of valproic acid and some of its analogues with microsomal epoxide hydrolase
D Robins, P Wedlund, S Elberg, P Oesch & H Thomas (Lexington, USA & Mainz, FRG)
- 154 (P5) Measurement of hepatic cytochrome P-450, epoxide hydratase and glutathione S-transferase in singly or gang-housed CD1 mice fed 0.05% phenobarbital in the diet for 90 days
D F Newton, V Stuart, A R Waller, M Jordan & R W James (Huntingdon, UK)
- 155 (P6) The effect of α -cyano pyrethroids on one index of hepatic microsomal enzyme induction
A Anadón, M R Martínez-Larranaga, M J Díaz, P Bringas & C Velez (Madrid, Spain)
- 156 (P7) Metabolism and toxicity of thioamides
M J Ruse & R H Waring (Birmingham, UK)
- 157 (P8) A study of hepatic microsomal enzyme induction in beagles treated orally with 450191-S for 52 weeks
P Bluford, A R Waller, L F Chasseaud, C Gopinath, Y Harada, R J Harling & R W James (Osaka, Japan & Huntingdon, UK)
- 158 (P9) Effect of subacute exposure to DDT and chlordane on pharmacokinetics of chlorazepate in rabbits
A Sakharovskaya, Y Chugh & P L Sharma (Chandigarh, India)
- 159 (P10) Diethylamide of nicotinic acid activation of rat liver enzymes participating in hydroxylation and conjugation of xenobiotics
P I Lukhtenko, M I Bushina, L F Legonkova & L B Zavodnik (Grodno, USSR)
- 160 (P11) Induction and inhibition of rat liver cytochrome(s) P450 by an imidazole fungicide (prochloraz)
J C Lhuguenot, L Laignelet, J F Narbonne & J L Rivière (Dijon, Marcy l'Etoile & Talence, France)
- 161 (P12) Lipid peroxidation and benzo(a)pyrene activation to mutagenic metabolites: in vivo influence of vitamins A, E, C and glutathione in both dietary vitamin A sufficiency and deficiency
C Colin, J F Narbonne, M L Migaud, P Grolier & P Cassand (Talence, France)
- 162 (P13) Induction of cytochrome P450 and xenobiotic metabolising enzymes in rats exposed to a petroleum crude oil
A A Khan, R W Coppock, M M Schuler & L E Lillie (Vegreville, Canada)
- 163 (P14) Studies on the interaction of cimetidine with rat liver cytochrome P450
S P Faus, R D Combes & F De Matteis (Cagliari & Musselburgh, UK)
- 164 (P15) Suicidal inactivation of cytochrome P450 by halothane
M Mahno, S Cazzaro & M Rezzadore (Padova, Italy)
- 165 (P16) Regulation of hepatic monooxygenation and glucuronidation by oxygen in the perfused rat liver
R G Thurman, Y R Wu, P E Gony, F C Kadlman & S Belinsky (Chapel Hill, USA)

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ENZYME INDUCTION AND INHIBITION (cont)

Abstract

- 166 (P17) Assay of hepatic microsomal monooxygenases by use of 7-alkoxyquinolines
R T Mayer, K J Netter, F Heubel & A Buchheiser (Orlando, USA & Marburg, FRG)
- 167 (P18) Major increase of cotinine-directed pathways during induction of nicotine metabolism by phenobarbitone
H Foth, H Lösschen & G F Kahl (Göttingen, FRG)
- 168 (P19) Biochemical characterisation of microsomal haem oxygenase in the small intestinal epithelium
D Rosenberg & A Kappas (New York, USA)
- 169 (P20) Induction of cytochrome P450(PCN) by non-steroidal compound, M79193, in rat liver microsomes
F Sagami, K Tsukagata, T Igarashi, T Horie, M Kitada, T Obata, H Sadano & T Onitara (Ibaraki, Sapporo & Fukuoka, Japan)
- 170 (P21) Inducibility of cytochrome P450 dependent oxidation reactions in pure and mixed primary cultures of adult rat hepatocytes - *in vitro* comparison
C Niggemann, L Richert, M A Ivanov, A Bouant, C Bensoussan, M Lafont, C Melcior & A Cordier (Vitry sur Seine, France)
- 171 (P22) Differential effects on hepatic, renal and pulmonary mixed function oxidase activities in cattle exposed to a petroleum crude oil
A A Khan, R W Coppock, L E Lilie, M M Schuler & J Bystrom (Vegreville, Canada)
- 172 (P23) Circadian rhythm of liver parameters (cellular structure, mitotic activity, glycogen and lipids in liver and serum) during 3 consecutive cycles in phenobarbitone-treated rats
A Kasi, J Mishukawa, T Yabe, H Nani & H Alben (Ingelheim, FRG)
- 173 (P34) Peroxisome proliferation caused by cinnamyl anthranilate (CA) is due to the intact ester
A Viswallagum & J Caldwell (London, UK)
- 174 (P25) 2-Ethylhexanoic acid inhibits urea synthesis and stimulates carnitine acetyltransferase activity in rat liver mitochondria
S Kröger, A Mänttinen & J Eerivirta (Kuopio, Finland)

ENDOCRINE TOXICOLOGY (Abstracts 175-185)

Chairmen: P Preziosi (Rome, Italy) and H Azouvi (Villejuif, France)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Regent Room, Grand Hotel.

- 175 (P27) Central modulation of hydraurea-induced adrenocortical activation
P Preziosi, M Vacca, R Del Carmine & P Navarra (Rome & Sassari, Italy)

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ENDOCRINE TOXICOLOGY (cont)

Abstract

- 176 (P28) Aziridine derivatives of biogenic amines as inhibitors of steroid biogenesis
K J van der Merwe, C M Moorhoff, P Swart, S S de Kock, E de Villiers & C de Villiers (Stellenbosch, South Africa)
- 177 (P29) Biochemical and morphological changes indicative of thyroid hyperactivity in rodents following treatment with hypolipidaemic drugs
S C Price, A J Spencer, C T Easton, R Hinton, F W Bonner & P Grasso (Guildford & Alnwick, UK)
- 178 (P30) *In vitro* effects of cisplatin and carboplatin on Leydig cell function
H Azouri, J M Bitant, C Fmaz, A Lefevre, M Pallardy & G Bohoun (Villejuif, Chatenay-Malabry & Montrouge, France)
- 179 (P31) Irreversible binding and toxicity of 3-methylsulphonyl-DDE in the adrenal cortex of perinatal mice
J Jonsson, B-O Lund, A Bergman & I Brandt (Uppsala & Stockholm, Sweden)
- 180 (P32) Inhibition of raw soya flour-induced pancreatic hyperplasia by a-cholecystokinin antagonist
S Sundaram & A D Dayari (London, UK)
- 181 (P33) Are changes in pituitary cells of aged rats related to the development of neoplasia in endocrine tissues? An immunocytochemical study
P J Haylett & C J Powell (London, UK)
- 182 (P34) Differential changes in thyroxine (T4) and triiodothyronine (T3) serum concentrations in rats following administration of several thyroid-system interfering agents. Study of their effects on hepatic and renal thyroid hormone metabolism
V de Sandro, E Robert, M Chevrier, K Zillhardt, C Melejon & A Cordier (Viry sur Seine, France)
- 183 (P35) The eosinophilic cell in the islet of Langerhans of the beagle
K Tanaka, K Okazaki, T Nagata, S Oneda, H Fujimura & R Nagata (Tokyo & Kagoshima, Japan)
- 184 (P36) The interference of polychlorinated biphenyls (PCB) with steroidogenesis in male guinea pig adrenal microsomes
A Yawetz & D Goldman (Tel Aviv, Israel)
- 185 (P37) Thyroid toxicity in rats treated with the histamine H₁ receptor antagonist SK&P 93944: an insight into its mechanism of action
A Poole, R Jones, D Pritchard & T Leonard (Welwyn Garden City, UK)

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GENOTOXIC CARCINOGENESIS (Abstracts 186-206)

Chairmen: H M Bolt (Dortmund, FRG) and A Sivak (Cambridge, USA)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Edinburgh Room, Metropole Hotel.

Abstract

- 186 (P38) The pharmacokinetics and DNA binding of urethane in mice
K Okudaira, K Morimoto & A Takahashi (Tokyo, Japan)
- 187 (P39) Oral carcinogenicity study with ipriflavon in mice and rats
S Elek, L Siklósi, G Bous, E Csányi, K Nagy, J Somlai & I Polgari (Budapest, Hungary)
- 188 (P40) Specific reactivity of adrenal cells of bald rats to chemical carcinogens
M Inoue, Y Mishima & T Kobayashi (Kawagoe & Kobe, Japan)
- 189 (P41) Oncogene activation in experimentally induced lung tumours
M E Frazer, B J Kelman, L L Whiting, S R Peterson & G L Stiegler (Richland, USA)
- 190 (P42) Acute toxicity, genotoxicity and dermal carcinogenicity assessment of isobutylacrylate
S C Gordon, D D Zimberman & P D Griffith (St Paul, USA)
- 191 (P43) Multi-level studies of mechanisms of tumour initiation
B D Mahan, D B Mahan & D L Springer (Richland, USA)
- 192 (P44) Hydroxylation and sulfotransferase catalytic formation of highly mutagenic sulfone esters of carcinogenic hydroxymethylbenzenes
T Watabe, K Ogura, H Okada & A Hirumoto (Tokyo, Japan)
- 193 (P45) Modifying effects of soybean trypsin inhibitor on carcinogen-induced pancreatic alterations in rats
Y Hayashi, T Takahashi & F Taniawa (Tokyo, Japan)
- 194 (P46) Biliary excretion of the pro-mutagen 2-amino-3,4-dimethylimidazo (4,5-f)quinoline (MeIQx) and intestinal nuclear toxicity in the rat
S J Perry & J K Chapman (Birmingham, UK)
- 195 (P47) Binding of the epoxides of ethylene and vinyl chloride to nucleic acids
H M Bolt, U Fost, H Peter, J Hegemann & B Marczynski (Dortmund, FRG)
- 196 (P48) Benzene metabolite-DNA nucleotide interaction: formation of a hydroquinone-dAMP adduct
B Snyder & R L Guy (Piscataway, USA)
- 197 (P49) Activation of the food mutagen MeIQx by cytochrome P450 and non-P450 enzyme systems
N J Goulderham, J Morgan, G Srinivasan, A R Boobis & D S Davies (London, UK)
- 198 (P50) Administration of the food derived carcinogen MeIQx to mice: urine analysis
N J Goulderham, J C Rice, A R Boobis & D S Davies (London, UK)

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GENOTOXIC CARCINOGENESIS (cont)

Abstracts

- 199 (P51) Human cytochrome P450 content: a determinant of dietary cancer risk?
R P Murray, D Seward, D S Davies & A R Boobis (London, UK)
- 200 (P52) Inhibitory effects of sodium selenite, selenomethionine, alpha-tocopherol and beta-carotene on diethylnitrosamine and 2-acetylaminofluorene-induced hepatocarcinogenesis in rat
S Kawachi, K Sasagawa, T Kuribara & K Komura (Tokyo, Japan)
- 201 (P53) Species differences in crosslinking activity of butadiene between rats and mice
R R Vargula, H M Boff & R J Loh (Dortmund, FRG)
- 202 (P54) Carcinogenicity of asphalt fume fractions following skin application in C3H/HeJ and Swiss mice
A Strah, K Belis, R Latta, K Menzies, A Ross, D Lynch, R Neimeier, B Belinky, S Simon & R Salomon (Cambridge & Cincinnati, USA)
- 203 (P55) Oncogene amplification by chemical carcinogens in cultured human fibroblasts
B van Aken, F ten Hoor, J ten Kate, P Miesker, F Bosman & J C Kleinjans (Maastricht, The Netherlands)
- 204 (P56) Chloroform bioactivation in colon mucosa from rat and man
J Krenzel, E Testai & L Vittorazi (Rome, Italy)
- 205 (P57) Dosimetry of ethenoxide adducts in DNA of several organs from vinyl chloride (VC)-exposed rats
P Crouzet, A Barbin & M Bartsch (Lyon, France)
- 206 (P58) Collagen matrix changes are expressions of carcinogenic action in mouse liver
P Stenback, J Stengard, E A Suominen & G M Williams (Oslo, Finland & Valhalla, USA)

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ENVIRONMENTAL AND ECOTOXICOLOGY (Abstracts 207-225)

Chairmen: P E Benveniste (Berkeley, USA) and D Calamari (Milan, Italy)

Papers will be displayed in the Main Hall. The Discussion Group will be held in the Gloucester Room, Metropole Hotel

- 207 (P69) Effects of the insecticide Thiodan 35 (endosulfan) on some phase 1 and phase 2 enzymes in gut-free soft tissues of garden chafer (*Phylloperla horticola*)
E Eggen, J U Skår & E G Jensen (Ås-NLH, Norway)
- 208 (P70) Effects of the insecticide endosulfan on some phase 1 and phase 2 enzymes in gut-free tissues of the yellow mealworm (*Tenebrio molitor* Linnaeus)
E Eggen, A Gohsory, J U Skår, N O Svendsen & E G Jensen (Ås-NLH, Norway)

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ENVIRONMENTAL AND ECOTOXICOLOGY (cont)

Abstract

- 210 (P71) Effects of the insecticide Thiodan 35 (endosulfan) on some phase 1 and phase 2 enzymes from gut and gut-free tissues of last instar (*Oryctes nasicornis* larva)
E. Egean, J. U. Skare, B. G. Jensen & S. Kober (Ås-NLH, Norway)
- 210 (P72) A data base for extrapolations of toxic effects on aquatic organisms
S. Marchini, L. Pascerini, A. Pino & M. L. Tosato (Rome, Italy)
- 211 (P73) Temporal and spatial variation in a battery of biomarkers in Great Lakes fish-eating birds in relation to known patterns of chemical contamination
G. A. Fox, S. W. Kennedy & S. Trudeau (Ottawa, Canada)
- 212 (P74) Monooxygenase activities in wild birds
J. L. Mylère (Marcy l'Etoile, France)
- 213 (P75) Induction of sister chromatid exchanges in ULE-23HU cultured fish cells by directly and indirectly acting mutagens
E.-H. Park, J. Y. Lee & K. J. Lee (Seoul, Korea)
- 214 (P76) Artificial outdoor streams: evaluation of biological effects of toxic chemicals under semi-natural conditions
G. C. Mitchell (Sittingbourne, UK)
- 215 (P77) Accumulation of endosulfan by catfish under laboratory conditions
B. Nowak (Sydney, Australia)
- 216 (P78) Cell transformation by organic extract of air-borne particulate
T. Ding, F. Wang & J. Li (Jinan, China)
- 217 (P79) The mutagenic activity of lake water in relation to micronucleus rate of fish red blood cells
F. Wang, T. Ding, H. Zhu, J. Li, C. Liu, C. Peng & P. Han (Jinan, China)
- 218 (P80) Acute toxicity of MX, a drinking water mutagen, in the rat
H. Komulainen, H. Huuskonen, V.-M. Kosma, T. Vartiainen, S. Lötjönen, K. M. Savolainen & J. Tuomisto (Koupio, Finland)
- 219 (P81) Effect of sulphur amino acids on GSH S-transferase in the common earthworm (*Lumbricus terrestris*)
A. Furst, Q. Nguyen & L. Nguyen (San Francisco & Santa Clara, USA)
- 220 (82) Prevention of groundwater contamination by pesticides: a California programme
P. E. Betteau & D. C. Mengle (Berkeley, USA)
- 221 (P83) Chlorophenol, PCDD and PCDF exposures of population after pollution of ground water
P. Lampi, T. Vartiainen, A. Hesso & J. Tuomisto (Kuopio & Helsinki, Finland)
- 222 (P84) Biomonitoring of atrazine exposure in man
M. Maroni, G. Calenacci, Q. Conica & V. Fol (Milan & Pavia, Italy)
- 223 (P85) Exposure to pentachlorophenol in wood industry
C. Colosio, M. Maroni, S. Garattini & H. Knoppel (Milan & Ispira, Italy)

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ENVIRONMENTAL AND ECOTOXICOLOGY (cont)

Abstract

- 224 (P86) Levels of organochlorine insecticides in milk of mothers from urban and rural areas of Botucatu, SP, Brazil
I. S. Sant'Ana, I. Vassiloff & L. Joki (Botucatu, Brazil)
- 225 (P87) Urine and blood levels of mercury in the fishermen and their families, residents by the side of Tietê and Piracicaba Rivers which form a Dam of Barra Bonita, in São Paulo State, Brazil
I. Vassiloff, I. S. Sant'Ana, A. A. Almeida, I. Sanchez (Botucatu, Brazil)

HEPATOTOXICOLOGY II (Abstracts 226-244)

Chairmen: H. M. McEldale (Jackson, USA) and G. Bellomo (Pavia, Italy)

Posters will be displayed in the Hewson Hall. The Discussion Group will be held in the Albert Room, Grand Hotel.

- 226 (P92) The cytoprotective role of a thromboxane synthetase inhibitor against Ca^{2+} -induced toxicity *in vivo* and *in vitro*
J. M. Wood & A. Horton (Birmingham, UK)
- 227 (P93) The study on *in vitro* toxicity of TNT to intact rat hepatocytes
Z. X. Zhuang, S. J. Liu & Q. G. Jiang (Beijing, China)
- 228 (P94) Effects of TNT on the Ca^{2+} transport and membrane morphology of rat liver subcellular fractions
Z. X. Zhuang, S. J. Liu & Q. G. Jiang (Beijing, China)
- 229 (P95) Toxic effects of sustained high calcium levels in hepatocytes
J. P. Nagelkerke, P. Dijkster, H. J. G. M. de Boer & G. J. Mulder (Leiden, The Netherlands)
- 230 (P96) N-Acetyl-L-homocysteine (NAC)-induced Ca^{2+} release from rat liver mitochondria
M. Wen, G. A. Moore, S. D. Nelson & B. Moldeus (Stockholm, Sweden)
- 231 (P97) Effect of extracellular calcium on the induction of cell death: a role for lipid peroxidation
J. P. Dijkster, G. J. Mulder & J. P. Nagelkerke (Leiden, The Netherlands)
- 232 (P98) Involvement of Mg^{2+} regulated Ca^{2+} uptake in the regulation of Ca^{2+} dependent endonuclease activity in liver nuclei
P. Nicolini, D. J. McCloskey, D. P. Jones & S. Orrenius (Stockholm, Sweden)
- 233 (P99) Role of DNA damage in cell killing during oxidative stress
J. Dijkster & P. Nagelkerke (Stockholm, Sweden)
- 234 (P100) 2,3-Dihydroxy-1,4-bis(4-hydroxyphenyl)-5-norbornene inhibits hormonal response in rat liver
G. P. N. Koo, G. J. Farrell, S. K. Duddy & S. Orrenius (Stockholm, Sweden)

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HEPATOTOXICOLOGY II (cont)

Abstract

- 235 (P101) Suppression of hepatic peroxisome proliferation by calcium antagonists
T Watanabe, H Ueda & T Soga (Machinoji, Japan)
- 236 (P102) CCl₄ induced alterations of hepatic calmodulin in rats pretreated with chloroquine (Kephene)
P R S Kodavanti, U M Joshi & H-M Mehendale (Jackson, USA)
- 237 (P103) A role for the glutathione peroxidase/reductase enzymes in age-related differences of paracetamol toxicity in mouse hepatocytes
A W Harman & G M Adairson (Nedlands, Australia)
- 238 (P104) Study of hydrazine toxicity to rat liver hepatocytes
S Ghallib & J A Timbrell (London, UK)
- 239 (P105) *In vitro* assessment of cocaine metabolism and toxicity in primary rat hepatocyte cultures
P Boixis, U A Buchselt & P Donatich (Basle & Zurich, Switzerland)
- 240 (P106) Effect of 2,3,8-tetrachlorodibenzo-p-dioxin on EGF-stimulated rat hepatocytes
J J Mills & J B Greig (Cardiff, UK)
- 241 (P107) Fast detection of caustic P450 isoenzyme patterns with chemoluminescence
E H S M Jansen, E J M Kemerkik & R H van den Berg (Bilthoven, The Netherlands)
- 242 (P108) Recovery of capacity of producing glucose in hepatocytes inhibited by nitrogen
J D Pedreira & M P Miguez (Caceres, Spain)
- 243 (P109) Ultrastructural alterations induced by flutopren in isolated hepatic cells and their partial recovery
M P Miguez, A Gajago & J D Pedreira (Caceres, Spain)
- 244 (P110) Acetaminophen hepatotoxicity: immunological detection of 3-(cysteine-S-yl) acetaminophen protein adducts
J Hinson, N Pannof, R Benson & D Roberts (Jefferson, USA)

IN VITRO TOXICOLOGY I (Abstracts 245-266)

Chairmen: J. Traister (Baltimore, USA) and M. Terasaki (Cincinnati, USA)

Posters will be displayed in the Newton Hall. The Discussion Group will be held in the Buckingham Room, Metropole Hotel.

- 245 (P128) Early toxicity in human pulmonary artery endothelial (HPAE) cells with amiodarone (A) is associated with an increase in intracellular free (Ca²⁺) to micromolar levels
G Pavia, R Olsen, W Martin & D Kachel (Rochester & Indianapolis, USA)
- 246 (P129) Studies on an *in vitro* model system for carcinogenicity
J Loh-Friedrich, T Friedrich & W Schaepe (Frankfurt, FRG)

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IN VITRO TOXICOLOGY I (cont)

Abstract

- 247 (P130) The effects of cadmium on metal homeostasis and MT induction in rainbow trout hepatocytes
F Gagné, M Marion & F Denizeau (Montreal, Canada)
- 248 (P131) Cadmium-induced alteration of membrane potential in isolated hepatocytes
J Martel, M Marion & F Denizeau (Montreal, Canada)
- 249 (P132) Anti-amanitin effect of Sibinin in an *in vitro* model with a human liver derived cell line (Chang)
L Wagner, K Mosser, A Donner, G Sunder & K Hruby (Vienna, Austria)
- 250 (P133) Activation of carcinogens to mutagens by rat liver nonparenchymal cells
P Steinberg, B Schlemper & F Oesch (Mann, FRG)
- 251 (P134) Paracetamol toxicity involves mitochondrial respiratory dysfunction in mouse hepatocytes
A W Harman & P C Burcham (Nedlands, Australia)
- 252 (P135) Hepatocytes cultured on extracellular matrix as a model for pathological and toxicological studies
M J M Tousseint & H Nederbragt (Utrecht, The Netherlands)
- 253 (P136) Scoring of cytotoxicity by image analysis using animal cell cultures
U Tillmann & H G Miltner (Darmstadt, FRG)
- 254 (P137) Protective effects of KW-3049 under ischaemia conditions on cultured mouse fetal heart cells
H Tanaka, K Sakurai, H Takahira & T Deguchi (Yamaguchi, Japan)
- 255 (P138) Maintenance of some cytochrome P450 isozymes in primary hepatocyte culture in the presence of dimethylsulphoxide
C K Lindsay & G M Hawksworth (Aberdeen, UK)
- 256 (P139) Comparison of *in vitro* toxicity endpoints as indices of hepatotoxicity
J Frazer & T Kolar (Baltimore, USA)
- 257 (P140) Paraquat induces DNA damage in cultured human endothelial cells (HUVEC)
G Hampel (Erlangen, FRG)
- 258 (P141) Bromobenzene toxicity in human Hep G2 hepatoma cells
M H Grant & S J Duthie (Aberdeen & Glasgow, UK)
- 259 (P142) The toxicity of Eniloxan in human liver derived Hep G2 hepatoma cells
S J Duthie & M H Grant (Aberdeen & Glasgow, UK)
- 260 (P143) Inhibition of intercellular communication in cardiac myocytes from neonatal rats by carbon tetrachloride and 1,1,1-trichloroethane
M Terasawa, H E Wey & M J Brenneisen (Cincinnati, USA)
- 261 (P144) Intrinsic toxicity data from tissue culture and prediction and analysis of *in vivo* response
F Hincal, E O Dillingham & J Aspin (Ankara, Turkey & Memphis, USA)

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IN VITRO TOXICOLOGY I (cont)

Abstract

- 262 (P145) Toxicity testing on sea urchin egg and the determination of subcellular targets of xenobiotics
D. Peinado, L. Bilyi, P. Amadé, D. Allemand, J. Berreur, S. Pélissier-Dao, J. P. Girard & P. Payan (Villefranche-sur-Mer, Nice & Gif-sur-Yvette, France)
- 263 (P146) Chemometric strategies in the assessment of chemicals' safety
M. L. Tosato, S. Clementi, M. Sjöström & S. Wold (Rome & Perugia, Italy; Umeå, Sweden)
- 264 (P147) Influence of cell age on the toxic response to food chemicals in *in vitro* culture
A. Kasamaki & S. Uchiyama (Sapporo, Japan)
- 265 (P148) *In vitro* inhibition of benzo(a)pyrene activation by an imidazole, the prochloral, in rat liver
E. Antignac, B. Koch, P. Cassand & J. F. Narbonne (Talence, France)
- 266 (P149) Histopathological evaluation of cultured precision-cut liver slices exposed to hepatotoxins
A. J. Gandolfi, C. M. Thomas, S. Azzi & K. Brendel (Tucson, USA)

PULMONARY TOXICOLOGY (Abstracts 267-289)

Chairman: P. J. N. Hollis (Cardiff, UK) and D. M. Bernstein (Carouge-Geneva, Switzerland)

Plenary will be displayed in the Newton Hall. The Discussion Group will be held in the Belmont Room, Montpelier Hotel.

- 267 (P150) Alterations in composition of epithelial lining fluid in response to inhaled particles
R. P. Henderson, E. D. Barry, J. K. Harbison, J. A. Pickrell & A. F. Eide (Albuquerque, USA)
- 268 (P151) Investigation of a role for desethylaminodione in aminodione-induced pulmonary toxicity
T. E. Mackay, T. E. Daniels & J. F. Brien (Kingston, Canada)
- 269 (P152) Identification of toxic lung lesions by IgGery
A. P. Sahu (New Delhi, India)
- 270 (P153) Crystalline lung cells of rat from tobacco
N. P. Johnson, D. G. Thomassen & A. L. Brooks (Albuquerque, USA)
- 271 (P154) Comparative long-term morphologic and biochemical changes induced by O,O,S-trimethyl phosphorothioate (OOS) in the rat and mouse lung
S. K. Dufhain, M. J. J. Gijbels, J. Gandy & T. Inamura (Nutley & Little Rock, USA; Rijswijk, The Netherlands; Carouge-Geneva, Switzerland)

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PULMONARY TOXICOLOGY (cont)

Abstract

- 272 (P155) Effect of *O,O,S*-trimethyl phosphorothioate (OOS-TMP), a pneumotoxin, on pulmonary functions and haemorphology
T. Iwasawa, R. Ventrone, M. L. Bezençon, J. Roux, E. M. Grandjean & S. K. Durham (Carouge-Geneva & Nyon, Switzerland; Nutley, USA)
- 273 (P156) Effect of acute paraquat intoxication on rats' lung tissue
A. Y. Hoshikawa-Fujimura, A. J. Guimarães, A. E. Aznar & S. Barros (São Paulo, Brazil)
- ✓ 274 (P157) Membrane perturbation by cigarette smoke of rat lung microsomes
Y. Ohmura, M. Tomita, S. Fujisawa, A. Fujimoto & K. Nakai (Akita, Japan)
- 275 (P158) Synergistic effects on lipid peroxidation and antioxidative systems in lungs of rats and guinea pigs exposed to NO_2 and O_3
M. Sagai & T. Kumase (Tsukuba, Japan)
- 276 (P159) Metabolism and toxicity of bromobenzene in the olfactory mucosa
C. Holm & E. B. Bråtebo (Uppsala, Sweden)
- 277 (P160) Dichlobenil, a herbicide highly toxic to the nasal mucosa in mice
I. Brandt, E. B. Bråtebo, B. O. Lund & J. Hakke (Uppsala, Sweden & Fargo, USA)
- 278 (P161) Differences in sensitivity to methylxanthine pyrolysis of pulmonary vascular endothelium and smooth muscle cells in culture
R. A. Roth, J. F. Reindel & C. M. Hoorn (East Lansing, USA)
- 279 (P162) Effects of long-term exposure to low concentration of nitrogen dioxide and ozone on rats' lungs - electron microscopic morphometry
J. Yonemoto, A. Kawagoe & M. Murakami (Tsukuba, Japan)
- 280 (P163) The role of arachidonic acid mediators in toxic gas inhalation
A. M. Soluto, T. P. Kennedy & G. H. Gurner (Baltimore, Durham & Valhalla, USA)
- 281 (P164) Effect of cyclophosphamide and vitamin E deficiency on lung mitochondrial lipid dynamics
J. M. Patel & M. Sekharam (Gainesville, USA)
- ✓ 282 (P165) Sensitivity of lung mitochondrial respiratory chain enzymes in rats exposed to hydrogen sulphide gas
A. A. Khan, M. M. Schuler, M. G. Prior, R. W. Coppock & L. E. Lillie (Vegreville, Canada)
- ✓ 283 (P166) Hydrogen sulphide-induced injury of rat airway epithelium
M. G. Prior, A. Lopez, L. E. Lillie & A. A. Khan (Vegreville, Canada)
- 284 (P167) Cellular specificity of the effects of paraquat in rat lung slices with compromised oxidative defences
S. J. Hardwick, L. L. Smith & G. M. Cohen (LONDON & Macclesfield, UK)
- 285 (P168) Carbon monoxide uptake as an index of pulmonary diffusion in rats
J. A. Arias & A. Cockburn (Stock, UK)

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TUESDAY 18 JULY

PULMONARY TOXICOLOGY (cont)

Abstract

- 286 (P169) Morphological changes of human lung parenchyma in relation to cytostatic therapy
K. Kayser, H. J. Gabius, S. Carl, F. Enckev & S. Bach (Heidelberg & Oettingen, FRG)
- 287 (P170) Effect of flax dust extract on perfused isolated lung of the guinea pig
P. J. Bates & P. J. Nicholls (Cardiff, UK)
- 288 (P171) Refractory ceramic fibers (RCF): experimental design and interim results from inhalation oncogenicity studies in rats comparing 4 RCFs with chrysotile asbestos
D. M. Bernstein, H. Fleischer, C. Bouvier, O. Vogel, J. Chevalier, R. Mast & R. Anderson (Carouge/Geneva, Switzerland, Cleveland & Denver, USA)
- 289 (P172) Inhalation toxicity of pyrolysis products of polymeric materials in rats
R. Raje & L. Greenberg (Brooklyn, USA)

2000 WORKSHOPS Brighton Metropole Hotel

There are a limited number of places at each Workshop and admission is by pre-booked ticket.

- W4 THE RELEVANCE OF DRUG METABOLISM POLYMORPHISMS IN TOXICITY AND CARCINOGENICITY**
Balmoral Room
Organiser: A. R. Boobis (London, UK)
- W5 OVER-EVALUATION AND OVER-INTERPRETATION OF THE RESULTS OF TOXICITY STUDIES: THE IMPACT ON DEVELOPMENT OF NEW CHEMICALS AND PHARMACEUTICALS**
Buckingham Room
Organiser: T. B. Tuck (Philadelphia, USA)
- W6 MOLECULAR BIOLOGY OF CHEMICAL CARCINOGENESIS**
Edinburgh Room
Organiser: K. T. Aithenon (Macclesfield, UK)

WEDNESDAY 19 JULY

0845-1145

SYMPOSIUM 6 Brighton Centre

Immunotoxicology

Chairmen: J M Dewdney (Epsom, UK) and I Kimber (Macclesfield, UK)

Abstract

- 0845-0915 290 The immune system as a site for toxic damage
J M Dewdney (Epsom, UK)
- 0915-0945 291 Clinical consequences of congenital and/acquired immune deficiency in man
M R Haenen (Salford, UK)
- 0945-1015 292 The immunological and clinical effects of cyclosporin A in man
B Rytzel, B M J Foxwell, J F Borel & M J Mihatsch (Basle, Switzerland)
- 1015-1045 293 The relationship between clinical immunology and classical experimental immunotoxicology
G Zbinden (Zurich, Switzerland)
- 1045-1115 294 Experimental studies: immunotoxicity and altered host resistance in rodents
J G Vos, E F Kraaije & H Van Loveren (Bilthoven, The Netherlands)
- 1115-1145 295 Mechanisms of immunotoxicity
W P Greenlee (Research Triangle Park, USA)

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0845-1145

SYMPOSIUM 7 Brighton Metropole Hotel

Susceptibility of different age groups to toxic damage

Joint Symposium with International Life Sciences Institute (ILSI)

Chairmen: R Kroes (Bilthoven, The Netherlands) and E A Lock (Macclesfield, UK)

0845-0920 296

- The effect of physiological competence on toxicity: the response of neonates
J L Blumer (Cleveland, USA)

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WEDNESDAY 19 JULY

Susceptibility of different age groups to toxic damage (cont)

- | | Abstract | |
|-----------|----------|--|
| 0920-0955 | 297 | Changes in DNA repair with ageing and its influence on genotoxicity
J Vijg (Rijswijk, The Netherlands) |
| 0955-1030 | 298 | Susceptibility of different age groups to toxic damage
I H Stevenson (Dundee, UK) |
| 1030-1105 | 299 | Age-related changes in renal function and their effect on toxic response
R S Goldstein (King of Prussia, USA) |
| 1105-1140 | 300 | Evaluation of rodent models for the study of age-related modification in toxic response
K Kitani (Tokyo, Japan) |

1200-1300

PLENARY LECTURE Brighton Centre

Chairman: D S Davies (London, UK)

Signal transduction in cells as a target for toxic compounds

R H Michell (Birmingham, UK)

1300-1430

LUNCH Brighton Centre

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WEDNESDAY 19 JULY

1430-1600

POSTER PRESENTATIONS Brighton Centre
Numbers in parentheses indicate poster boards

1600-1730

POSTER DISCUSSION GROUPS
Brighton Metropole and Grand Hotels

NEUROTOXICOLOGY I (Abstracts 301-320)

Chairmen: M. Lotti (Padova, Italy) and K. M. Saikolainen (Kuopio, Finland)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Edinburgh Room, Metropole Hotel

Abstract

- 301 (P1) Changes in acetylcholinesterase activity in rat brain after foot-shock stress in an animal model of depression are reversed after administration of imipramine and lithium
K. Tyede, M. Gjørtved, A. V. Christensen & J. S. Schou (Copenhagen & Roskilde, Denmark)
- 302 (P2) Carbaryl induced inhibition of plasma, erythrocyte and brain cholinesterase in singly and group housed CD rats
O. P. Green, S. E. Burton, D. Crook, K. Brodie & R. W. James (Huntingdon, UK)
- 303 (P3) Time course of ChE activity, lactate, pyruvate and Hb after physostigmine administration in trained rats
S. R. Babu, S. N. Dube & S. M. Somani (Springfield, USA)
- 304 (P4) Effects of acute exercise after physostigmine administration on ChE activity, lactate, pyruvate and Hb in rats
S. M. Somani & S. N. Dube (Springfield, USA)
- 305 (P5) Delayed neurotoxicity of triphenyl phosphite in hens
N. Konno, K. Katoh, T. Yamauchi & M. Fukushima (Fukushima, Japan)
- 306 (P6) Effects of age on delayed neurotoxicity of triphenyl phosphite in chickens
K. Katoh, N. Konno, T. Yamauchi & M. Fukushima (Fukushima, Japan)
- 307 (P7) 200 Fold purification of neuropathy target esterase (NTE)
M. E. Rueffer-Turner, D. J. Read & M. K. Johnson (Cardiff, UK)
- 308 (P8) A model of peripheral organophosphorus induced delayed neuropathy after surgery and local *in vivo* dosing
V. Carrera, E. Vilanova, M. C. Mauricio & J. Barril (Alicante, Spain)
- 309 (P9) Soluble and particulate forms of the organophosphorus neuropathy target esterase (NTE) activity in hen sciatic nerve and brain
J. Barril, E. Vilanova, V. Carrera & M. C. Pellin (Alicante, Spain)

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WEDNESDAY 19 JULY

NEUROTOXICOLOGY I (cont)

Abstract

- 310 (P10) Organophosphorus hydrolase activity (A-esterase) in several rat and hen tissues using *O*-hexyl, *O*-dichlorophenyl phosphoramidate (hexyl-DCP) as substrate
N Diaz-Alejo, J L Vicedo, M C Pellin & E Vilanova (Alicante, Spain)
- 311 (P11) Lithium amplification of cerebral inositol-1-phosphate concentrations: different effects in different rat strains
K M Savolainen, M R Hirvonen, S R Nelson, F E Samson & T L Pazdernik (Kuopio, Finland & Kansas City, USA)
- 312 (P12) Changes in cerebral inositol-1-phosphate concentrations in LiCl-treated rats: regional and strain effects
K M Savolainen, M R Hirvonen, S R Nelson, F E Samson & T L Pazdernik (Kuopio, Finland & Kansas City, USA)
- 313 (P13) The effect of malanoxon on cerebral inositol-1-phosphate and calcium levels in aged rats
M R Hirvonen, K M Savolainen (Kuopio, Finland)
- 314 (P14) Deterioration of neuronal inositol phosphates *in vivo* and *in vitro* in the presence and absence of lithium
P Korjus, M R Hirvonen, J Tahvanen & K M Savolainen (Kuopio, Finland)
- 315 (P15) Insights into DMSO effects on transmembrane signalling in *S. cerevisiae* as a eukaryotic model
A C Pauck, S Poppe, E Van Halbeem & V B C Junqueira (Sao Paulo, Brazil)
- 316 (P16) Aldehyde dehydrogenase inhibitors enhance neurotoxic effect of ethanol
S M Zamiatin (Grobo, USSR)
- 317 (P17) Effects of bicuculline on γ -aminobutyric acid binding sites in rat brain
T K Hu, Y Liu & D K Lim (Jackson, USA)
- 318 (P18) Dopamine receptors and a jumping behaviour induced by harmine and apomorphine in rats
K Morita & T Koga (Chiba, Japan)
- 319 (P19) Effect of various chemicals on nerve tissue cell differentiation *in vitro*
A Bruening, P Reiser & G Zbinden (Zurich, Switzerland)
- 320 (P20) The effects of poly-L-amino acids on gentamicin induced neurotoxic changes in the isolated nerve cord of the cockroach
P L Chambers & L P Callaghan (Dublin, Ireland)

WEDNESDAY 19 JULY

NON-GENOTOXIC CARCINOGENESIS (Abstracts 321-330)

Chairmen: C. R. Eneambo (Macclesfield, UK) and L. Wærnård (Stockholm, Sweden)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Grandmaster Room, Metropole Hotel

Abstract

- 321 (P27) Phenylisobutyrate-induced hypergastrinaemia and neuroendocrine cell hyperplasia in the rat
F. W. Böhner, C. T. Eason & A. J. Spencer (Aldwick, UK)
- 322 (P28) Induction of ornithine decarboxylase activity in primary cultures of adult rat hepatocytes
M. Warholm (Solna, Sweden)
- 323 (P29) Protection of GGT-positive rat hepatocytes against GSH-depletion, oxidative stress and reversible alterations of cell surface receptors for adhesion to extracellular matrix
U. Stenius & J. Höglberg (Solna, Sweden)
- 324 (P30) Investigation of the mechanism of non-genotoxic epithelial carcinogenesis
S. D. Hewitt, P. A. Duffy, R. C. Garner & T. C. Orton (York & Macclesfield, UK)
- 325 (P31) Factors in dichloroacetate- and 3-methylcholanthrene-induced hepatocarcinogenesis
R. Bull, M. Nelson & F. Sánchez (Pullman, USA)
- 326 (P32) Role of urinary sodium and potassium concentration and pH in urinary bladder carcinogenesis in rats
B. A. R. Lina & R. A. Woujensen (Zeist, The Netherlands)
- 327 (P33) Hepatic effects of chlorinated paraffins
C. R. Eneambo, S. C. Watson, A. R. Smailes & J. R. Foster (Macclesfield, UK)
- 328 (P34) Role of oxygen tension and hepatotoxicity in mechanism of action of peroxisomal proliferating agents
R. G. Thurman & B. J. Ketter (Chapel Hill, USA)
- 329 (P35) Comparative studies of DDT and structurally related pesticides on tumour promotion-related effects
S. Hultström, H. Hennings, L. Wærnård & U. G. Ahlberg (Stockholm, Sweden)
- 330 (P36) Increased labelling indices in rat gastro-intestinal tract tissues following 14 days of oral butylated hydroxyanisole administration
H. Verhagen, C. Farnée, B. Schutte & J. C. S. Kleijans (Maastricht, The Netherlands)

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WEDNESDAY 19 JULY

RISK ASSESSMENT (Abstracts 331-341)

Chairmen: B. A. Brown (Washington, USA) and K. N. Woodward (London, UK)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Albert Room, Grand Hotel.

Abstracts

- 331 (P37) Hazard and risk assessment and management in USDA
B. A. Brown, A. Post, M. Norcross, M. Cordle & Z. Hruskova (Washington, USA)
- 332 (P38) Computer-assisted methods for assembling, analysing and interpreting toxicological data
D. Brusch & R. Cox (Vienna, USA)
- 333 (P39) Occupational exposure to dioxin in the pulp and printing industry
P. Eneqvist, R. Schenberg & P. Kumpulainen (Helsinki & Tampere, Finland)
- 334 (P40) Alteration of cytochrome P-450 enzyme induction by pesticides in rats as a result of chronic acrylonitrile exposure: implications for compounds such as organophosphates and parathion
R. P. Mader, D. E. R. Cox & M. H. Kohn (Waco, Texas, USA)
- 335 (P41) Inter-species variability and extrapolation: problems about chronic, long term and reproductive toxicity studies
P. H. Johansson (St. Louis, USA)
- 336 (P42) Different approaches to risk assessment
P. C. T. Moore (USA)
- 337 (P43) Adverse reaction impurity for veterinary drugs
A. K. Gray & K. N. Woodward (Weybridge & London, UK)
- 338 (P44) Adverse reactions in humans arising from the use of veterinary drugs
K. N. Woodward & A. K. Gray (London & Weybridge, UK)
- 339 (P45) Assessment of the safety of dieldrin in controlling aquatic vegetation in reservoirs
P. F. Hertzog & A. M. Farnham (Berkeley, USA)
- 340 (P46) Carcinogenic potency in man versus animal models
A. Gregory & J. Comis (Alexandria, USA)
- 341 (P47) Species differences in the metabolism of alachlor: implications for human risk assessment
A. G. E. Wilson, R. C. Dirks & J. M. Maher (St. Louis, USA)

WEDNESDAY 19 JULY

CUTANEOUS TOXICOLOGY (Abstracts 342-348)

Chairmen: D H Pullinger (Eye, UK) and S A Hotchkiss (London, UK)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Regent Room, Grand Hotel

Abstract

- 342 (P48) An assessment of the toxicity of pentadecanoic acid monoglyceride
D H Pullinger, M Masuda, K Oba, Y Takagi, J Bootman, A Broadmeadow, P M Brown, H A Cummins, F W Ross, P A McAnulty, S T Rhenius, C N Roberts & J M Tesh (Odawara-shi, Japan & Eye, UK)
- 343 (P49) Evidence for the existence of a cutaneous reservoir for benzyl acetate
S A Hotchkiss, S Fraser & J Caldwell (London, UK)
- 344 (P50) *In vitro* dermal absorption and metabolism of benzyl acetate
A Garnett, S A Hotchkiss, S Fraser & J Caldwell (London, UK)
- 345 (P51) Pathology and immunohistochemistry of sulphur mustard skin injury
P Guitin (Vert le Petit, France)
- 346 (P52) Percutaneous metabolism and absorption of pesticides
S E Macpherson, F M Williams, R C Scott & M D Rawlins (Newcastle upon Tyne & Macclesfield, UK)
- 347 (P53) Phototoxic studies of quinolone antibacterial agents in Balb/c strain mice
K Tawara, N Wagai, F Yamaguchi, M Sekiguchi & T Onodera (Tokyo, Japan)
- 348 (P54) Establishment of experimental conditions for detecting phototoxic potentials of drugs in Balb/c strain mice
N Wagai, F Yamaguchi, K Tawara & T Onodera (Tokyo, Japan)

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IN VITRO TOXICOLOGY II (Abstracts 349-369)

Chairmen: M P Ryan (Dublin, Ireland) and Y H M Van Erp (Hertogenbosch, The Netherlands)

Posters will be displayed in the Hewison Hall. The Discussion Group will be held in the Buckingham Room, Metropole Hotel

- 349 (P69) The study on *in vitro* toxicity of TNT to human erythrocytes and its mechanism
Z X Zhuang, S J Liu & Q G Jiang (Beijing, China)
- 350 (P70) Acrolein-induced injury to vascular endothelial cells
J M Patel & E R Block (Gainesville, USA)
- 351 (P71) The correlation between drugs' LC50 in brine shrimp, their oral ED50 in rats, and their lethal concentration in man
M Mahmoudian, P Noughnejad & S Amini (Tehran, Iran)

WEDNESDAY 19 JULY

IN VITRO TOXICOLOGY II (cont)

Abstract

- 352 (P72) Pretreatment with luthionine sulphoximine and diethyl maleate alters spermine toxicity in BHK-21/C13 cells
V G Brunton, M H Grant & J M Walling (Aberdeen, UK)
- 353 (P73) Prevention by glutathione monoethyl ester of microtubule disassembly induced by 1-chloro-2,4-dinitrobenzene
M-F Leung & T N Chou (Boston, USA)
- 354 (P74) The effects of prostaglandin E_2 on cultured rat embryos
A Yokoyama & K Ito (Tokyo, Japan)
- 355 (P75) *In vitro* study to clarify the nephrotoxicity mechanism of aminoglycoside and cephalosporin antibiotics with renal epithelial cells
M Kurebe, H Kawano, K Kiyomiya & N Matsushita (Yokohama, Japan)
- 356 (P76) Relationship between *in vitro* and *in vivo* toxic effects of antitumour agents
M Kurebe, K Kawamura, M Seki, K Kiyomiya & N Sugiyama (Yokohama, Japan)
- 357 (P77) *In vitro* evaluation of teratogenicity of chemicals using the postimplantation embryo culture system
M H Savary, V Garbino, J-F le Bigot & R Glonnet (Evreux, France)
- 358 (P78) Cisplatin transport in LLC-PK₁ and MDCK renal cell lines grown on-microporous membranes
B Casey, I Pratt & M P Ryan (Dublin, Ireland)
- 359 (P79) Effect of cisplatin on isolated rat kidney proximal tubular fragments: an *in vitro* model for nephrotoxicity studies
S McGinness, I Pratt & M P Ryan (Dublin, Ireland)
- 360 (P80) Development of a primary rat renal proximal cell culture model for nephrotoxicity studies
T Barron, I Pratt & M P Ryan (Dublin, Ireland)
- 361 (P81) Cations and the activity of soluble protein kinase C
H Katayama, Y Inoue, K Saigo & K Sumito (Kobe, Japan)
- 362 (P82) Mitochondrial DNA as a model for *in vitro* toxicology studies
G Singh (Hamilton, Canada)
- 363 (P83) Study of chronic toxicity of pyrazinamide in four established cell lines (FAO, Hep G2, L929, Vero)
P Bat, X Rénier, J M Wamet, J R Claude & M Adolphe (Paris, France)
- 364 (P84) Evaluation of cytotoxicity of chemicals using plastic multiwell plates
L Sheng-Qing (Harbin, China)
- 365 (P85) Eye irritancy screening for classification of chemicals
V H M Van Erp (Hertogenbosch, The Netherlands)
- 366 (P86) A QSAR approach in toxicity testing by the chick embryo method
G L Biagi, M C Guerra & A M Barbato (Bologna, Italy)

WEDNESDAY 19 JULY

IN VITRO TOXICOLOGY II (cont)

Abstracts

- 367 (P87) Is BECAM an alternative to the Draize eye irritation test?
T Sutton (Welwyn Garden City, UK)
- 368 (P88) Comparative cytotoxicities of aminoglycoside antibiotics in the LLC-PK₁, Chang, and Scc cell lines
T J Raczniak & D A Linseman (Kalamazoo, USA)
- 369 (P89) SkinexTM, an in vitro method for determining dermal irritation
V C Gordon, C P Kelly & H C Bergman (Palm Springs, USA)

IMMUNOTOXICOLOGY AND ALLERGY (Abstracts 370-400)

Chairmen: J G Vos (Bilthoven, The Netherlands) and J G Kenna (London, UK)

Posters will be displayed in the Havelton Hall. The Discussion Group will be held in the Balmoral Room, Metropole Hotel.

- 370 (P92) Effect of acrylonitrile on the immunocompetent cells' function and the activity of leucocytes' membrane-dependent enzymes
L Usimovich, I Grigorieva, V Ivanov & A Cheredeev (Krasnojarsk & Moscow, USSR)
- 371 (P93) Effects of chlorobutadiene on the levels of cAMP and cGMP in plasma and splenic lymphocytes of mice
Y Li, H Zhu & C Qiao (Beijing, China)
- 372 (P94) Lymphocyte proliferative responses and the severity of contact allergic reactions
I Kimber, J A Mitchell & A N Bentley (Macclesfield, UK)
- 373 (P95) Dendritic cell migration during contact sensitisation
M Camberbatch, J A Mitchell, S W Peters & I Kimber (Macclesfield, UK)
- 374 (P96) The local lymph node assay and assessment of contact allergic potential
J Hilton & I Kimber (Macclesfield, UK)
- 375 (P97) Is it possible to predict allergenic potential? A preliminary assessment
B Edwards, R Parr-Dubrzanski & J M Dewdney (Epsom, UK)
- 376 (P98) A guinea pig model of respiratory allergy to small molecules
P A Botham, N J Ratray, S T Walsh, D R Woodcock & P M Hext (Macclesfield, UK)
- 377 (P99) Suppression of anaphylactic shock in sensitised guinea pigs by cytochalasin B
D V Stefani, A V Semenov & G P Kudrina (Moscow, USSR)
- 378 (P100) Aerosol exposure of guinea pigs to platelet activating factor with the nose-only exposure system induces a concentration-dependent eosinophil accumulation in the airway
K Boubekeur, T Imamura & J Morley (Carouge-Geneva & Basle, Switzerland)

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IMMUNOTOXICOLOGY AND ALLERGY (cont)

Abstract

- 379 (P101) Toxic effects of chlorobutadiene inhalation on the bone marrow of mice
Y Li, H Zhu & C Qiao (Beijing, China)
- 380 (P102) Toxic effect of chlorobutadiene on the immunosurveillance function of mice
Y Li, H Zhu & C Qiao (Beijing, China)
- 381 (P103) Toxic effects of chlorobutadiene on the macrophages of rat and mouse
Y Li, H Zhu & C Qiao (Beijing, China)
- 382 (P104) Bone marrow toxicity of actinomycin D: significance for antiinflammatory effects in rat adjuvant arthritis. Flow cytometric investigations
R Hirschelmann, A Martin, R A Weidhase & H Bekemeier (Halle, GDR)
- 383 (P105) Non-specific activation of antibody formation *in vitro* by heavy metals
M Ohsawa, K Takahashi & F Otsuka (Sagamiko, Japan)
- 384 (P106) Effect of 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) on immune response in C57Bl mice
K Ueno, S Ohkawara, Y Enosawa & T Satoh (Chiba, Japan)
- 385 (P107) Guanethidine-induced sympathectomy in the nude rat
P Thygesen, H P Hougen, H B Christensen, J Rygaard, O Svendsen & P Juul (Copenhagen, Denmark)
- 386 (P108) *In vivo* induction of pre-B cells in bone marrow of rats administered intravenously with bacterial lipopolysaccharides (LPSs)
H Kawaji & M Nakazawa (Kitakoma-gun, Japan)
- 387 (P109) Effects of pyridoxine on the disposition and lymphopenic effects of 2-acetyl-4(5)-tetrahydroxybutyl imidazole in the rat
J A Phillips & A J Paine (London, UK)
- 388 (P110) Different effects of 2-acetyl-4(5)-tetrahydroxybutyl imidazole on lymphocyte subsets in peripheral blood of germ free and conventional rats
S J P Gobin, J A Phillips & A J Paine (London, UK)
- 389 (P111) Structural requirements for suppression of cell-mediated immune response by polycyclic aromatic hydrocarbons
M Pallardy, H Lebrec, R House & C Bohum (Chatenay-Malabry, France & Research Triangle Park, USA)
- 390 (P112) Immunotoxicological alterations induced by fluoropyrimidine derivatives, cyclosporin A and Ubenimex in rats. II. Histopathological assessment
I Horii, A Kawashima & K Ueda (Kamakura, Japan)
- 391 (P113) Immunotoxicological alterations induced by fluoropyrimidine derivatives, cyclosporin A and Ubenimex in rats. I. Haematological and immuno-functional assessment
T Inoue, I Horii & K Ueda (Kamakura, Japan)
- 392 (P114) Immunotoxicity of lindane to guinea-pigs by oral administration
L Q A Caldas, M V C Monteiro & E Rodrigues (Niteroi, Brazil)

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WEDNESDAY 19 JULY

IMMUNOTOXICOLOGY AND ALLERGY (cont)

Abstract

- 393 (P115) Immunoresponsiveness of metal treated animals by using a simplified macrophage migration test
L Q A Caldas & R Hicks (Niteroi, Brazil & Bradford, UK)
- 394 (P116) Effect of fatty acid anilides on the immune system of the Swiss mouse: abnormalities in the synthesis of immunoglobulins
R Blasco, P Sanz, I Flores, T Pastor & M Hopen (Seville, Spain)
- 395 (P117) TCDD stimulation of thymocyte apoptosis *in vivo*
D J McConkey, P Hartzell & S Orrenius (Stockholm, Sweden)
- 396 (P118) Purification of trifluoroacetylated protein disulphide isomerase from livers of halothane treated rats
J G Kenna, J L Marj, B M Martin & L R Pohl (Bethesda, USA & London, UK)
- 397 (P119) Methods useful in diagnosis of the immunotoxic disease, halothane hepatitis
K L Hastings, S Schuman, A K Hubbard & A J Gandolfi (Tucson, USA)
- 398 (P120) The immunotoxic effect of benzene
V N Fedoseeva, A N Shaleisky & L V Aristovskaya (Moscow, USSR)
- 399 (P121) The outcome of chemotherapy with different nitrosoureas against a syngeneic tumour depends on the mode of action of the drug on the host's anti-tumour immunity
M Nagarkatti & P S Nagarkatti (Blacksburg, USA)
- 400 (P122) Aldicarb, a carbamate pesticide selectively suppresses macrophage but not autoreactive T cell and NK cell functions
P S Nagarkatti, T N Dean, R S Selvan & M Nagarkatti (Blacksburg, USA)

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CLINICAL TOXICOLOGY AND EPIDEMIOLOGY (Abstracts 401-431)

Chairmen: J A Vale (Birmingham, UK) and P B Farmer (Cardiff, UK)

Posters will be displayed in the Hovilton Hall. The Discussion Group will be held in the Empress Room, Grand Hotel

- 401 (P136) Glutathione mediated inhibition of sulphamethoxazole hydroxylamine (SMX-HA) cytotoxicity
A E Critchley, J S Leader, H M Dosch & S P Spielberg (Toronto, Canada)
- 402 (P137) Effects on morbidity and mortality from paracetamol overdose 1979-1987 and the over the counter release in Denmark 1984
H E Poulsen, P Ott, P B Hansen, K Dalhoff & S Loft (Copenhagen, Denmark)
- 403 (P138) Quantitative analysis of EEG in acute poisoning by benzodiazepines
S I Magalini, C Adlano, R Calinici, F Della Corte, R Proietti & A Barelli (Rome, Italy)

CLINICAL TOXICOLOGY AND EPIDEMIOLOGY (cont)

Abstract

- 404 (P139) Neurophysiologic monitoring in severe central nervous system depression by acute poisoning.
A. Barilli, M. De Giacomo, R. Calimici, C. Sandrini, M. Valente & S. I. Magalini (Rome, Italy)
- 405 (P140) Reversal of advanced digitoxin poisoning in rabbits by monoclonal anti-digitoxin Fab fragments.
M. Urtubera, A. Sabouraud, N. Terrien & J. M. Schellmann (Paris, France)
- 406 (P141) Rhodanese encapsulated carrier erythrocytes in antagonising cyanide intoxication.
E. Caisson, P. Leung, D. McGuinn, C. Yao, R. Davis & J. Way (College Station, USA)
- 407 (P142) A rapid screening of stimulants by high performance liquid chromatography.
T. Nagai, M. Saito, Y. Miura, T. Nagai & S. Kamiyama (Sagamihara-shi, Tokyo & Tochigi, Japan)
- 408 (P143) Kinetics and safety of intravenous 4-methylpyrazole in humans.
K. E. McMarion, D. F. Dies, C. S. Sebastian, S. K. Barish & R. L. Smith (Shreveport, USA)
- 409 (P144) The haemodynamics of paraquat poisoning in acute phase.
Y. Sawada, Y. Ohno, K. Shigemitsu, I. Yamamoto & M. Ueyama (Kagoshima, Japan)
- 410 (P145) Determination of stimulant amines and testosterone by TLC and GLC.
N. Yurak, S. Suzen & S. Saygi (Ankara, Turkey)
- 411 (P146) Kinetics of cobalamins in cyanide intoxications treated with hydroxycobalamin.
F. J. Baud, V. Toffis, P. Barriot, J. Muzynski, A. Astier & C. Bismuth (Paris & Créteil, France)
- 412 (P147) Clinical use of RO 15-1788: side effects and complications.
R. Calimici, A. Barilli, C. Addario, A. Arcangeli, S. D'Aprano & M. De Giacomo (Rome, Italy)
- 413 (P148) Clinical evaluation of direct haemoperfusion for treatment of acute drug intoxication.
T. Chishiro & T. Tanaka (Osaka, Japan)
- 414 (P149) A development of new drug screening system "multi-HPLC" using multi-wavelength ultraviolet detector for poly-drug poisoning.
S. Suzuki, Y. Yamashita, T. Otsuka, M. Hayashida, M. Nihira & T. Watanabe (Tokyo, Japan)
- 415 (P150) Ring hydroxylation in the metabolism of styrene producing *p*-hydroxymandelic acid in urine.
K. Pekari, V. Riihimäki, P. Pääfli, M. Sorsa & H. Vainio (Helsinki, Finland)
- 416 (P151) Urinary 1-naphthol as an indicator of exposure to naphthalene and creosote.
M. Luotamo, P. Heikkilä, V. Riihimäki & M. Rönkä (Helsinki, Finland)
- 417 (P152) Changes of immune functions of workers exposed to chlorobutadiene.
Y. Li, H. Zhu, C. Qiao & J. Yu (Beijing, China)

CLINICAL TOXICOLOGY AND EPIDEMIOLOGY (cont)

Abstract

- 418 (P153) Tetrachloroethylene exposure of residents near dry-cleaning shops
B Gröber, H Kruus & O Wassermann (Kiel, FRG)
- 419 (P154) Biomonitoring of 4,4'-methylenebis(2-chloroaniline) in exposed workers: identification and importance of urinary *N*-glucuronide
J Cocker, A R Boobis, H K Wilson & D Gompertz (London, UK)
- 420 (P155) Dosimetry of DNA adducts in Chinese hamster ovary cells and C3H10T1/2 mouse embryo fibroblast cells treated with benzo[a]pyrene
W P Watson & R J Smith (Sittingbourne, UK)
- 421 (P156) Antimony metabolism: its relevance for the biological monitoring of workers
J P Buchet, R Lauwerys, J Konings & R Bailly (Brussels, Belgium)
- 422 (P157) Identification of alkylguanines in human urine by tandem mass spectrometry
J R Cushoff, P B Farmer & J H Lamb (Cardiff, UK)
- 423 (P158) Biological exposure monitoring for chemical spills and fires
P Edelman (Orange, USA)
- 424 (P159) Occupational hygienic and biological monitoring of exposure to ethylenedithiocarbamate fungicides and ethylenethiourea
P Kurtti, T Vartiainen & K M Savolainen (Kuopio, Finland)
- 425 (P160) DNA adducts of polycyclic aromatic hydrocarbons in coke oven workers
K Vauhakangas, S Ovrebo, A Haugen, E Arjanneikka & O Pellonen (Oulu, Finland & Oslo, Norway)
- 426 (P161) Human genotoxicity in phosphine-exposed fumigant applicators
M Garry, T Dangel, R Nelson, J Griffith & E Whorton (Minneapolis, USA)
- 427 (P162) The effects of alcohol drinking on development of occupational trinitrotoluene (TNT) liver damage: an in-plant case-control study
J Li & Q G Jiang (Beijing, China)
- 428 (P163) Dimethylformamide induced liver and muscle damage among synthetic leather workers: are hepatitis B carriers more susceptible?
J D Wang, M Y Lai, J S Chen, J M Lin, J R Chiang, S J Shiao & W S Chang (Taipei, Taiwan)
- 429 (P164) Correlation between the urinary excretion of arsenic and the concentration of pyruvic acid in blood in acute arsenic intoxications
U Götelli, M Viggiano, E Cernichiani & T W Clarkson (Buenos Aires, Argentina & Rochester, USA)
- 430 (P165) The feasibility of using lead in hair concentration as a monitor of occupational lead exposure
A Pineau (Nantes, France)
- 431 (P166) Formation of methaemoglobin and metmyoglobin using 8-aminoquinoline derivatives or sodium nitrite and subsequent reaction with cyanide
S I Baskin & R K Steinhaus (Maryland, USA)

THURSDAY 20 JULY

0915-1145

SYMPOSIUM 8 Brighton Centre

Mechanistic studies in developmental and reproductive toxicology

Chairmen: R Bass (Berlin, FRG) and J E Gibson (Midland, USA)

Abstract

- 0915-0945 432 Male-mediated teratogenesis: fact or fiction
N A Brown (London, UK)
- 0945-1015 433 Interference with hormonal control of rodent reproduction and its
implication for human risk assessment
W Elger (Berlin, FRG)
- 1015-1045 434 Insertional mutagenesis as a means of studying mammalian embryonic
development
W J Scott, J McNeish, S Potter & H-J Merker (Cincinnati, USA &
Berlin, FRG)
- 1045-1115 435 Genetic, biochemical and toxicological basis of chemically-induced
abnormal development
D Neubert, T Platzek, R Meister & I Chahoud (Berlin, FRG)
- 1115-1145 436 Retinoids and human reproduction
D T Chen (Basle, Switzerland)

0915-1145

DEBATE Brighton Metropole

Chairmen: G Zbinden (Zurich, Switzerland) and S Gangoli (Cardiff, UK)

**"In view of the extent to which the development of toxicology
has been restricted by GLP, the guidelines and their
practical implementation should be radically simplified"**

For the motion: F J C Roe (London, UK)

Against the motion: W H Koneimann (Rijswijk, The Netherlands)

Those wishing to speak in the debate should give their name at the Registration Desk and
indicate whether they intend to support or oppose the motion.

THURSDAY 20 JULY

1200-1300

PLENARY LECTURE Brighton Centre

Chairman: J W Bridges (Guildford, UK)

Reactive intermediates and interactions with biological systems

D. Munsuy (Paris, France)

1300-1430

LUNCH Brighton Centre

1430-1730

SYMPOSIUM 9 Brighton Centre

Mechanisms of action and clinical efficacy of antidotes

Joint Symposium with the International Programme for Chemical Safety (IPCS) and the World Federation of Clinical Toxicology Centres and Poison Control Centres

Chairmen: M J Mercier (Geneva, Switzerland) and G N Volans (London, UK)

Abstract

- | | | |
|-----------|-----|--|
| 1430-1500 | 437 | Mechanisms of action and clinical efficacy of antidotes
M J Mercier & J A Haines (Geneva, Switzerland) |
| 1500-1530 | 438 | The evaluation of antidotes
I R Edwards (Dunedin, New Zealand) |
| 1530-1600 | 439 | The mechanism of action and value of antidotes to paracetamol
L F Prescott (Edinburgh, UK) |
| 1600-1630 | 440 | New chelating agents
F H Kemper (Münster, FRG) |
| 1630-1700 | 441 | Antidotes for organophosphorus poisoning: experience in developing countries
A F Rahde (Potto Alegre, Brazil) |
| 1700-1730 | 442 | Antidotes for cyanide poisoning
A N P van Heijst (Busch en Duin, The Netherlands) |

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THURSDAY 20 JULY

1430-1600

POSTER PRESENTATIONS Brighton Centre
Numbers in parentheses indicate poster boards

1600-1730

POSTER DISCUSSION GROUPS
Brighton Metropole and Grand Hotels

REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY (Abstracts 443-474A)

Chairmen: P M D Foster (Macclesfield, UK) and B P Schmid (Nyon, Switzerland)

Posters will be displayed in the **Main Foyer**. The Discussion Group will be held in the **Salmoral Room, Metropole Hotel**

Abstract

- 443 (P1) Comparison of the effects of mono-(2-ethylhexyl)phthalate (MEHP) on hormonal responsiveness of cultured rat and hamster Sertoli cells
S C Lloyd & P M D Foster (Macclesfield, UK)
- 444 (P2) Teratogenicity of retinoic acid derivatives in rat embryos cultured during the early stages of organogenesis
B P Schmid, L Caquerel & P Attenon (Nyon, Switzerland)
- 445 (P3) The temporal sensitivity of chicken embryo micronass cultures to all-trans-retinoic acid
R Wiger & C Bjørge (Oslo, Norway)
- 446 (P4) The development of a protocol to screen chemicals for reproductive toxicity
L E Gray Jr, J Osby, J Ferrell & R Sigmon (Research Triangle Park, USA)
- 447 (P5) Structure-activity relationships in the developmental toxicity of substituted phenols
R J Kavlock, L Olgesby, L L Hall & M F Copeland (Research Triangle Park, USA)
- 448 (P6) Effect of lead on reproduction in perinatally-exposed rats
M Plasek & K Kostial (Zagreb, Yugoslavia)
- 449 (P7) Valproic acid teratogenicity and *in vitro* lymphocyte susceptibility
J G C Oostag, M H Willeveen & D Lindhout (Rotterdam, The Netherlands)
- 450 (P8) Effects of reproductive tract glutathione (GSH) depletion and enhancement on ethylmethanesulphonate (EMS)-induced dominant lethal mutations
J Gandy, H K Baies, E A Bucher & R D Harbison (Little Rock, USA)
- 451 (P9) Expression of hydrocortisone acetate induced cleft palate in CFLP mouse fetuses obtained from singly- or gang housed dams
A M Bottomley, A J Brooker, D M John & R W James (Huntingdon, UK)
- 452 (P10) The metabolism and ovarian toxicity of 4-vinylcyclohexene (VCH)
B J Smith, D R Mattison & I G Sipes (Tucson & Jefferson, USA)

THURSDAY 20 JULY

REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY (cont.)

Abstract

- 453 (P11) The effects of different toxic substances on excretion of purines in Japanese quail embryos cultured *in vitro*
H Kaltner, D Zickert, M Schrott & J Wittmann (Munich, FRG)
- 454 (P12) Skeletal abnormalities induced in rat foetuses by maternal massive doses of ergocalciferol
F Ariyuki, T Sakata, S Minamide, M Susami & A Okanawa (Osaka, Japan)
- 455 (P13) Evaluation of reproductive toxicity of ortho-dichlorobenzene (ODCB) in the rat
R Nair, J Barter, H Bolte, R Schroeder & C Stack (St Louis, Pittsburgh, East Millstone & Washington, USA)
- 456 (P14) Urinary creatinine profiles after administration of cell-specific testicular toxins to the rat
N P Moore, D M Creasy, T J B Gray & J A Timbrell (London, Epsom & Carshalton, UK)
- 457 (P15) Behavioural changes in offspring of rats exposed to diazepam during gestation
R Fagiano, M A De Salvia, M Persichella, E Tortella & V Cuomo (Bari, Italy)
- 458 (P16) Dominant lethal and teratologic effects of polycyclic aromatic hydrocarbons
B D Mahlum, T J Mast & D L Springer (Richland, USA)
- 459 (P17) Sodium lauryl sarcosinate, an irritating agent in topical vaginal formulation
Y B Yuan, J K Scheninger & A M Cooper (Kalamazoo, USA)
- 460 (P18) Stimulation of chondrogenesis of rat limb bud cells by cyanovirin RR (macrocytin-RR), a toxin from the blue green alga *Microcystis viridis*
J Yokomoto, A Kawagoe, K Kaya & M M Watanabe (Tsukuba, Japan)
- 461 (P19) Reversal of bioprosthetic or litorone developmental toxicity with progesterone
T A Marks, D L Black, R D Terry, D G Branstetter & K J Kirtan (Kalamazoo, USA)
- 462 (P20) Possible involvement of foetal hypochloraemia in furosemide-induced wavy ribs in rat foetuses
T Nakatsuka, T Asami, T Fujii & T Sakaguchi (Saitama, Japan)
- 463 (P21) Pesticide induced atresia in the ovaries of a fish, *Colisa lalia*
A Sukumar & P R Karpagaganapathy (New Delhi & Annamalai-nagar, India)
- 464 (P22) Biochemical changes along with testicular atrophy induced by di-n-butylphthalate in rats
M Fukuioka, Y Zhou, J Ikemoto, A Tanaka & T Machida (Tokyo, Japan)
- 465 (P23) Waterhouse-Friderichsen Syndrome induced by the administration of stimulant
T Nagai, M Saito, Y Miura & T Ikeda (Sagamihara-shi & Tokyo, Japan)
- 466 (P24) Inhibition of rat embryonic cell viability and differentiation by styrene oxide *in vitro*
C Gregotti & E M Faustman (Pavia, Italy & Seattle, USA)
- 467 (P25) Effect of refuic acid on the urokinase activity of macrophages and post-implantation embryos
B Knops, D Lison, C Collette, R Lauwerys & J J Picard (Brussels, Belgium)
- 468 (P26) Corticosterone induction of cleft palate in mice dosed with oriprenaline sulphate
A Kasi, H Iida, Y Tsunenari & M Asakura (Ingelheim, FRG)

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REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY (cont)

Abstract

- 469 (P27) Behavioural and biochemical parameters in developing rats after prenatal application of methamphetamine
H Rex, E Bien, D Klatner & G Skorka (Berlin, GDR)
- 470 (P28) Potentialities of quantitative evaluation of results of experiment in applied teratology
A Torchinsky, V Kazachenko, Y Bobnnev & E Chirkova (Moscow, USSR)
- 471 (P29) Influence of age on the toxic response of rats to sulphenamides
T Guskova, N Arkalova, L Chicherina, N Simova & L Malisova (Moscow, USSR)
- 472 (P30) Anti-stimulant drug influence on the antenatal development of rats
I Golovanova & T Guskova (Moscow, USSR)
- 473 (P31) Embryo toxicity of retinoids in the rat: comparison of *in vitro* and *in vivo* data
C E Steele, J A Tipton & J N Haselden (Vitry sur Seine, France; London & Welwyn Garden City, UK)
- 474 (P32) Carbonylation versus alkylation: contribution to the developmental toxicity of five nitroaromatics *in vitro*
E M Faustman, Z Kirby & D Laflamme (Seattle, USA)
- 474A (P33) Influence of electrophilic character and glutathione depletion on dysmorphogenesis in cultured rat embryos
K L Stark, C Harris & M R Joshua (Seattle, USA)

CARDIOVASCULAR TOXICOLOGY (Abstracts 475-485)

Chairmen: B K J Leung (Kalamazoo, USA) and A Anadón (Madrid, Spain)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Regent Room, Grand Hotel.

- 475 (P34) The combined effects of an inhalation anaesthetic and an analgesic on the Electrocardiograms (ECGs) of beagle dogs
B K J Leung & D A Rup (Kalamazoo, USA)
- 476 (P35) Non cholinergic action of an organophosphorus compound upon heart rhythm
P Robineau, A Corbier, D Reustay & F Janes (Vert-le-Petit & Orsay, France)
- 477 (P36) Influence of benzene on electrocardiographic changes in acute poisoned conscious Wistar male rats
V V Bojanic, Z Z Bojancic & Z Stankovic (Nis, Yugoslavia)
- 478 (P37) Depression of contractility in cultured cardiac myocytes by carbon tetrachloride and 1,1,1-trichloroethane
M Tuziasov, J A Krueger & M J Breitenstein (Cincinnati, USA)

THURSDAY 20 JULY

CARDIOVASCULAR TOXICOLOGY (cont)

Abstract

- 479 (P38) The effect of benzylamine oxidase on allylamine induced cytotoxicity in myocardial myocyte reaggretes (MMR)
K Kesingland, L K Earl & A D Dayan (London, UK)
- 480 (P39) Determination of arteriototoxicity *ex vivo* after administration of toxic chemicals to laboratory animals
H Bekemeier & R Hirschelmann (Halle, GDR)
- 481 (P40) Pathologic study of gingival hyperplasia observed in dogs receiving large doses of a calcium channel blocking agent
T Usul, M Kenu, Y Nakaya & R S Eydeloth (Saitama, Japan & West Point, USA)
- 482 (P41) Cardiotoxic effects of methadone
J Melgar, J Bello & A Anadon (Zurich, Switzerland & Madrid, Spain)
- 483 (P42) Cardiotoxicity studies of an interaction of lead, digoxin and aminophylline
M S Krishnamoorthy & P Muthu (Madras, India)
- 484 (P43) Arsenite induced thrombocytopenia in the marmoset - dose and regimen dependent effects
F W Bonner, A Patton & C T Eason (Ainwick, UK)
- 485 (P44) Cardiovascular toxicity following the use of atenolol in combination with diuretics
O Verzhakova, T Guskova & O Isybulskaya (Moscow, USSR)

NEUROTOXICOLOGY II (Abstracts 486-504)

Chairmen: J Tuomisto (Koupio, Finland) and L Manzo (Pavia, Italy)

Posters will be displayed in the Main Foyer. The Discussion Group will be held in the Gloucestor Room, Metropole Hotel

- 486 (P45) Effect of potassium cyanide toxicity on brain glutamate
G E Isom, M Patel, J L Borowitz & B K Ardelt (West Lafayette, USA)
- 487 (P46) Alpha ketoglutaric acid (A-KG) and its antagonism of toxic effects of potassium cyanide (KCN)
A Hume, M Dulancy, T Collins & J Crout (Jackson, USA)
- 488 (P47) The structure-activity relationship of keto acids to act as antidotes against the nucleophilic poisons, cyanide (CN⁻) and sulphide (S²⁻)
A Hume, J Mozingo & M Dulancy (Jackson, USA)
- 489 (P48) Effect of allyl chloride on the ultrastructure of motor end-plates in rat
K Sun (Jinan, China)

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NEUROTOXICOLOGY II (cont)

Abstract

- 490 (P49) Ultrastructure changes of the muscle cells and the satellite cells caused by allyl chloride in rats
K Sun, L Yu & D Yang (Jinan, China)
- 491 (P50) Effect of allyl chloride on the ultrastructure of rat peripheral nerve fibres
K Sun, L Yu & D Yang (Jinan, China)
- 492 (P51) Effects of allyl chloride on the synthetical action potential and Na^+ , K^+ metabolism of nerve trunk
K Sun (Jinan, China)
- 493 (P52) Effect of allyl chloride on the nerve fibre microtubule, neurofilament and Ca^{2+} , Mg^{2+} metabolism in rats
K Sun (Jinan, China)
- 494 (P53) Effects of chronic ethanol intake on the central nervous system. A study on the amygdaloid complex of the rat
J Llorca & A Anadon (León, Spain)
- 495 (P54) Interaction of ethanol and other drug effects on operant behaviour
J Elsner & G Zbinden (Zürich, Switzerland)
- 496 (P55) Characterisation of acute and chronic ethanol effects in the CNS of rats and mice
K Andreas & A Winter (Dresden, GDR)
- 497 (P56) T-EDD is more toxic centrally than peripherally in the resistant Wistar rat
J Tuomisto, R Pohjanvirta & L Tuomisto (Kuopio, Finland)
- 498 (P57) Acute effects of ozone on EEG activity and heart rate in rats
H Arino, I Uchiyama & E Yokoyama (Kawasaki & Tokyo, Japan)
- 499 (P58) Effect of soman, atropine and HGG-12 upon the behavioural and physiologic state of the mouse
M Wentz, H Arndt & L Szinicz (Garching, FRG)
- 500 (P59) Effects of xenobiotics on the brain and metabolism of ^{14}C -derivatives in the rat brain after long-term intravenous injection of $[U-^{14}C]$ glucose
E Hayama & A Shigemitsu (Chiba, Japan)
- 501 (P60) The effects of carbon disulphide, *n*-hexane, 2,5-hexanedione and 2-hexanone on cell membrane integral proteins
H Tahfi, S Hyppönen & M Korpela (Tampere, Finland)
- 502 (P61) A novel action of the pyrethroid insecticide deltamethrin on mammalian muscle and nerve
D E Ray & P J Forshaw (Cardiff, UK)
- 503 (P62) Neuromuscular actions of sodium selenite on chick biventer cervicis nerve-muscle preparation
S Y Lin-Shiau, S H Liu & W M Fu (Taipei, Taiwan)

THURSDAY 20 JULY

NEUROTOXICOLOGY II (cont)

Abstract

- 504 (P63) Mechanisms of styrene neurotoxicity. A study in PC 12 cells
P Nicotera, H Thor, L Costa & L Manao (Stockholm, Sweden; Seattle, USA; Pavia, Italy)

MOLECULAR BIOLOGY AND ENZYMOLOGY OF
XENOBIOTIC METABOLISM (Abstracts 505-527)

Chairmen: G Powis (Rochester, USA) and M Pasanen (Oulu, Finland)

Posters will be displayed in the Newton Hall. The Discussion Group will be held in the Buckingham Room, Metropole Hotel

- 505 (P68) ✓ Metabolism of benzene (B) by human, rat and mouse liver cell preparations *in vitro*
G Powis & J Brodführer (Rochester, USA)
- 506 (P69) Role of hepatic glucuronidation in detoxication of benzene: effects of enzyme inducers
D Schrenk & K W Bock (Tübingen, FRG)
- 507 (P70) Metronidazole as a probe for xenobiotic metabolism in the rat
S Loft & H E Poulsen (Copenhagen, Denmark)
- 508 (P71) Comparison of UDP-glucuronosyltransferase (UDPGT) activities in rat hepatocytes and homogenates
M P Pritchard & G M Hawksworth (Aberdeen, UK)
- 509 (P72) On the conjugation of hydroxylated phenanthrenes by rat liver UDP-glucuronyltransferase forms
C Augustin, A Schmoldt, L v Meyerinck, J Jacob & G Grimmer (Hamburg, FRG)
- 510 (P73) Species differences in the hepatic response to peroxisome proliferators: identification of susceptible and non-susceptible species
J Makowska, F W Bohner & G Gibson (Guildford & Alnwick, UK)
- 511 (P74) Effects of exogenous putrescine on microsomal membrane fluidity in cholestatic rat liver
Y Aoki, K Mitsuta & H Itoh (Sagamihara & Tokyo, Japan)
- 512 (P75) Debrisoquine oxidation in bladder cancer
J Benitez, J M Ladero, M J Fernandez, A Ilerena, J Cobaleda, C Martinez, J J Muñoz, E Vargas, J Prados, F González, J Rodríguez & A Uson (Badajoz & Madrid, Spain)
- 513 (P76) Phosphorylation of carcinogen metabolising enzymes: regulation of phosphorylation of phenobarbitone inducible cytochromes P450 and functional consequences
B Bartlomowicz, T Friedberg & F Oesch (Mainz, FRG)
- 514 (P77) Hepatic drug metabolising enzymes in mice bearing the gene for human growth hormone (hGH)
P A Cossum & M R Franklin (San Francisco & Salt Lake City, USA)

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MOLECULAR BIOLOGY AND ENZYMOLOGY OF XENOBIOTIC METABOLISM (cont)

Abstract

- 515 (P78) Purification and characterisation of novel acidic glutathione S-transferases from rat liver
J Guth, H Thomas, T Igarashi & F Oesch (Mainz, FRG)
- 516 (P79) Evidence for several hepatic proteins related to microsomal epoxide hydrolase
T Friedberg, H Thomas, C Timms & F Oesch (Mainz, FRG)
- 517 (P80) Detergent activation of human hepatic UDP-glucuronosyltransferases
G Cameron & G M Hawksworth (Aberdeen, UK)
- 518 (P81) Immunochemical characterisation of cytochrome P450 isozymes responsible for benzene oxidation in the rat liver
T Nakajima, E Elovaaara, S S Park, H V Gelboin, E Hietanen & H Vainio (Helsinki, Finland)
- 519 (P82) Importance of cytochrome P450j (P450H1) in the styrene metabolism of rats
E Elovaaara, T Takajima, K Engstrom & H Vainio (Helsinki, Finland & Matsumoto, Japan)
- 520 (P83) Developmental changes in the expression and inducibility of cytochromes P450c and P450d in rat liver
K J Rich, R J Edwards, A M Singleton, J R Foster, D S Davies & A R Boobis (London & Macclesfield, UK)
- 521 (P84) Expression of P450IA1 gene in the human placenta
M Pasanen, H Rautio, P Siivonen, K Vahakangas & O Pelkonen (Oulu, Finland)
- 522 (P85) Characterisation of the binding site of an anti-peptide antibody specific to rat cytochrome P450d
A M Singleton, R J Edwards, A R Boobis & D S Davies (London, UK)
- 523 (P86) Studies of the tertiary structure of mammalian cytochromes P450 using anti-peptide antibodies
R J Edwards, B P Murray, A M Singleton, A R Boobis & D S Davies (London, UK)
- 524 (P87) A characterised P450H1B gene is expressed at high levels in sebaceous glands but not in the liver
T Friedberg, B Bartlomowicz & F Oesch (Mainz, FRG)
- 525 (P88) Isolation of a human liver cDNA showing homology with the human glutathione peroxidase gene
D K Dunn, D D Howells, J P Richardson & P S Goldfarb (Guildford, UK)
- 526 (P89) Characterisation of the catalytic site peptides of rat liver microsomal epoxide hydrolase
S Elsborg, H Thomas & F Oesch (Mainz, FRG)
- 527 (P90) Production of an antibody against cytochrome P450j by immunising with a synthetic peptide
G Hasheminejad, R J Edwards, A M Singleton, D S Davies & A R Boobis (London, UK)

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HEAVY METALS (Abstracts 528-562)

Chairmen: P Grandjean (Odense, Denmark) and E J Massaro (Research Triangle Park, USA)

Posters will be displayed in the Hovilton Hall. The Discussion Group will be held in the Empress Room, Grand Hotel

- 528 (P91) Delayed blood regeneration after phlebotomy in lead-exposed workers
P Grandjean, B M Jensen, S H Sandø, P J Jørgensen & S Antonsen (Odense, Denmark)
- 529 (P92) Flow cytometric and cytologic analysis of methylmercury cytotoxicity
E J Massaro, R M Zucker, K H Elstein & R E Easterling (Research Triangle Park, USA)
- 530 (P93) Chelation in acute oral cadmium intoxication
O Andersen & J Nielsen (Odense, Denmark)
- 531 (P94) Methylmercury distribution, excretion and demethylation in hamsters
K Petersson, L Dock & M Vaher (Stockholm, Sweden)
- 532 (P95) The effect of chronic lead poisoning on blood level of zinc, copper, magnesium and calcium
A Hedili, L N Slim, M Sougair, R Roudeshi, S Beh Naceur, F Ben Chamia, N Ben Salah, M Amamou & M Yacoub (Tunis, Tunisia)
- 533 (P96) Effect of topical application of zinc on metallothionein synthesis in the rat
U Wormser, S Ben Zakine (Jerusalem, Israel)
- 534 (P97) Heavy metals in consumable beef tissues
H Tsoukali-Papadopoulos, B Antoniou, N Zaitopoulou, B Nathanael & P Epivalianos (Thessaloniki, Greece)
- 535 (P98) Blood lead level distribution by age group in inhabitants of Ankara
G Gövendik & M Yural (Ankara, Turkey)
- 536 (P99) Absorption of orally administered mercuric chloride in mice
J Nielsen & O Andersen (Odense, Denmark)
- 537 (P100) Withdrawn
- 538 (P101) Interactions of humic acids with heavy metals and sulphonamides
M Kühnert, N Lange, V Fuchs, S Golbs & W Gaede (Leipzig, GDR)
- 539 (P102) Provocation of nickel allergic patients with hand eczema with a diet naturally high in nickel
G D Nielsen, L V Jepsen, J Gram, P Grandjean & F Brandrup (Odense, Denmark)
- 540 (P103) Influence of age on toxic element level in human hair from patients and industrial workers
R Subramanian & A Sukumar (New Delhi, India)
- 541 (P104) The effect of aluminum loading on liver, kidney and spleen of mice
S Duru, I Varol, A Temizer, G Sahin, K Benli & R Sunal (Ankara, Turkey)

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HEAVY METALS (cont)

Abstract

- 542 (P105) Response of blood lead and zinc protoporphyrin to EDTA treatment by a calf with subacute lead intoxication
A. Wijkens (The Hague, The Netherlands)
- 543 (P106) The effect of glucocorticoid treatment on metal retention in suckling rats
B. Kargacin, K. Kostial & M. Landeka (Zagreb, Yugoslavia)
- ✓ 544 (P107) Tolerance against cadmium toxicity: role of changes in cellular Cd-transport and metallothionein induction in rats
G. Nordberg & T. Jia (Umeå, Sweden)
- 545 (P108) Effect of dietary lipid and protein on intestinal absorption and organ distribution of methylmercury in mice
S. G. Poulsen, J. Nielsen & O. Andersen (Odense, Denmark)
- 546 (P109) Comparison of evolved hydrocarbons to thiobarbituric acid-reactive substances following oxidative damage induced by Cd in rat tissues
D. Manca, A. C. Ricard, B. Trotter & G. Chevalier (Montreal, Canada)
- 547 (P110) Combined effects of metal cations on calmodulin
P. J. S. Vig & D. Desai (Jackson, USA)
- 548 (P111) Is cadmium released from metallothionein in rejected human kidneys?
M. Nordberg, C. G. Elinder & B. Palm (Stockholm, Sweden)
- 549 (P112) Route of renal uptake of mercury compounds
N. Imura, T. Tanaka & A. Naganuma (Tokyo, Japan)
- 550 (P113) Dose related proximal tubular dysfunction in male rats chronically exposed to lead
A. Vyskocil, A. Bernart, V. Semecny & R. Lauwers (Hradec Kralove, Czechoslovakia & Brussels, Belgium)
- 551 (P114) Sex difference of methylmercury acute toxicity in mice
A. Yasutake, K. Haraoka & M. Inoue (Mitsunaka & Kumamoto, Japan)
- 552 (P115) Sex difference in methylmercury toxicity in rats: involvement of biotransformation
K. Haraoka, A. Yasutake, M. Inoue, Y. Kajiwara & T. Sudo (Mitsunaka & Kumamoto, Japan)
- 553 (P116) Cerebral and cerebellar lesions in mice following a single oral dose of methylmercury
M. Inoue, Y. Kajiwara, A. Yasutake & K. Haraoka (Mitsunaka & Kumamoto, Japan)
- 554 (P117) Intestinal absorption of dietary nickel: influence of beverages
G. D. Nielsen, P. T. Jorgensen & P. Grandjean (Odense, Denmark)
- 555 (P118) On the role of mitochondria in Cd toxicity in hepatocytes
P. Richelmi, F. Mirabelli, G. Bellandi & F. Berte (Pavia, Italy)
- 556 (P119) Trace element changes in heart transplant recipients treated with cyclosporin
E. Sabbioni, R. Pietra, M. M. Virigatti, M. Tunini & L. Manca (Milan, Intra & Pavia, Italy)

2501646122

HEAVY METALS (cont)

Abstract

- 557 (P120) Calmodulin modulation of adverse effects of Cd^{2+} on microtubules
I-N Chou & B A Perrino (Boston, USA)
- 558 (P121) Chromium and vascular prostacyclin production
G Togni & L Caprino (Rome, Italy)
- 559 (P122) Toxicological impact of lead on public health
A K Tripathy (New Delhi, India)
- 560 (P123) The content of lead in dental calculus as indicator of lead-loading of western
W Schunk & M Schafer (Erfurt, GDR)
- 561 (P124) Inhibitor effect of cysteine on mercury and copper ions induced haemolysis in the red cells
C M Mateo (Valladolid, Spain)
- 562 (P125) Effects of some heavy metals on drug metabolism: differences after prenatal and postnatal treatment
T Stoytchev & M Kadiiska (Sofia, Bulgaria)

PESTICIDES (Abstracts 563-590)

Chairmen: L L Smith (Macclesfield, UK) and J K Kodama (Richmond, USA)

Posters will be displayed in the Hawipon Hall. The Discussion Group will be held in the Edinburgh Room, Metropole Hotel

- 563 (P126) Effectiveness of charcoal to adsorb carbamate insecticides *in vitro*
H Tsoulali-Papadopoulos, B Nathanael, D Fadelidou & M Timouda (Thessaloniki, Greece)
- 564 (P127) Study of the enzymatic changes (SGPT, SGOT, LDH) in cases of paraquat poisoning
E Dimitriadis, P Epivranos & V Nathanael (Salonika, Greece)
- 565 (P128) Effects of thione on acute intoxication of paraquat in beagles
R Nagata, K Imai, T Moriya, J Yamashita, T Hirokane, T Nagata, Y Sawada, M Ishibashi & T Fukuda (Nagoshima, Japan)
- 566 (P129) Toxicological study on paraquat: pathological findings in beagles following a single administration
T Nagata, R Nagata, H Fujimura, K Okazaki, I Kono, S Arai, T Masaka & F Akahori (Sagamihara & Nagoshima, Japan)
- 567 (P130) Mammalian cholinesterase inhibition by acephate insecticide: An overview
J K Kodama, L C Gillis & Z A Wong (Richmond, USA)

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PESTICIDES (cont)

Abstract

- 568 (P131) Paraquat toxicity in selenium-deficient mice
S Hironaka, M Noguchi & N Imura (Tokyo, Japan)
- 569 (P132) Some aspects concerning the toxicological properties of humic acids, solitary agents in new veterinary pharmaceuticals
V Fuchs & M Kuchert (Leipzig, GDR)
- 570 (P133) Sub-chronic toxicity studies on monocrotophos in dogs
A Janardhan & P Sisodia (Hyderabad & Bangalore, India)
- 571 (P134) Pharmacological screening and structural elucidation of "otapiapia" - a rural Nigerian indigenous pesticide
H O Kwanashie, G J Amabeoku, E O Afolabi, J Adu & F Y Abuh (Zaria, Nigeria)
- 572 (P135) Ultrastructural changes in the hepatocytes of catfish exposed to endosulfan
B Nowak (Sydney, Australia)
- 573 (P136) Cholinesterase inhibition and recovery in monocrotophos- and acephate-fed rat
C-Y Hsin & W-H Lin (Wufeng, Taiwan)
- 574 (P137) Effect of paraquat on serum ceruloplasmin and α -macroglobulin levels in rabbits
F Akabori, T Masaka & S Arai (Sagamihara, Japan)
- 575 (P138) Toxicity and accumulation of endosulfan in tambori (*Hypessobrycon bifasciatus*)
M C Toledo, C M Jonsson & Y Yokomizo (Campinas, Brazil)
- 576 (P139) Chemically induced eosinophilic changes of the epithelial cells with or without crystalline deposits in the upper respiratory and digestive systems in mice
Y Nakao, R Ueki, M Tatematsu & S Fukushima (Ritto & Nagoya, Japan)
- 577 (P140) Chemically induced intracisternal inclusion bodies in mitochondria of hyperplastic mouse stratified squamous epithelium
R Ueki, Y Nakao, M Furukawa & T Wakabayashi (Ritto & Nagoya, Japan)
- 578 (P141) Aluminum phosphide poisoning: an experimental study
P L Sharma, C S Gautam & P Pandit (Chandigarh, India)
- 579 (P142) Pesticides and human health: study of five years in Campinas, Brazil
F Zamboni, (Campinas, Brazil)
- 580 (P143) Genotoxic evaluation of pesticides in short term tests
P Hrelia, M Paoletti, G L Biagi & G Camelli-Furti (Bologna, Italy)
- 581 (P144) Study of cardiotoxic effects of azinphos methyl in guinea pigs
M Balali-Mood, F Akhavan & F Rahimi (Mashhad, Iran)
- 582 (P145) Non cholinergic toxicity of organophosphorus insecticides in rats
S Tsuda, T Kojima, T Ikeda, H Takahashi & Y Shirasu (Mitsukaido, Japan)
- 583 (P146) Particular features of acute organophosphorous poisoning
R B Carrington da Costa, J Pimentel, A Rebelo, J Gonçalves & J Costa (Coimbra, Portugal)

THURSDAY 20 JULY

PESTICIDES (cont)

Abstract

- 584 (P147) Inhalation toxicity of suspended particulate pesticides
M Ando, K Tamura, S Asanuma, S Matsushima & K. Kahara (Tsukuba, Usada & Shiojiri, Japan)
- 585 (P148) Storage of HCH in people with different degrees of exposure to technical HCH in Brazilian cocoa culture
W A Carvalho, P R Berbert & N V P Rocha (Salvador, Brazil)
- 586 (P149) Toxicokinetics of permethrin in rats after oral administration
M R Martinez-Larañaga, A Anadón, M J Diaz, P Bringas & C Velez (Madrid, Spain)
- 587 (P150) Acute intoxication by aldrin: relationship between clinical signs and serum levels in man
W A Carvalho, G B Mates, S L B Cruz & D S Rodrigues (Salvador, Brazil)
- 588 (P151) Toxicity of endosulphan to frog
A Kumar, A Srivastava & M P Singh (Agra, India)
- 589 (P152) Protective effects of diazepam and midazolam in rats poisoned with highly toxic organophosphorus compounds
D Bokunje, M Jukanovic, N Rovic & M Maksimovic (Belgrade, Yugoslavia)
- 590 (P153) The study of the role of vitamin E and other antioxidants in the prevention and treatment of paraquat toxicity
K Sriwatanakul, R Saivises & P Temcharoen (Bangkok, Thailand)

IN VIVO AND IN VITRO GENOTOXICITY (Abstracts 591-604)

Chalmers, D Anderson (Cardiff, UK) and P Maer (Zurich, Switzerland)

Posters will be displayed in the Howison Hall. The Discussion Group will be held in the Albert Room, Grand Hotel.

- 591 (P159) Structure-activity relationships in the genotoxicity of methylated and non-methylated chrysonine azo dyes
P Sandhu & J K Chapman (Birmingham, UK)
- 592 (P160) Mutagenicity of nitrated polycyclic aromatic hydrocarbons in different *Salmonella* tester strains and rat microsomal activation system
J-K Lin, T-W Hsu & P-P Fu (Taipei, Taiwan & Jefferson, USA)
- 593 (P161) *In vivo* mutagenicity of the anthraquinone, danthron
J Allen, D Donnell & S Elrod (St Paul, USA & Loughborough, UK)
- 594 (P162) *In vitro* cell transformation systems for the detection of carcinogenic effects of chemical and pharmaceutical substances
H Buchner, A Poth & H G Miltenburger (Darmstadt, FRG)

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THURSDAY 20 JULY

IN VIVO AND IN VITRO GENOTOXICITY (cont)

Abstract

- 595 (P163) Unscheduled DNA synthesis and cytotoxicity in human lymphocytes with mainstream cigarette smoke particles
G Liu, F Wang, J Li & T Ding (Jinan, China)
- 596 (P164) Studies on genetic toxicity of synthetic detergent
T Ding & F Wang (Jinan, China)
- 597 (P165) *In vitro* cytotoxicity and morphological transformation of human lung cells with mainstream cigarette smoke particles
T Ding, C Liu, F Wang & J Li (Jinan, China)
- 598 (P166) Genotoxicity of 3 isomeric sulphur containing polycyclic aromatic hydrocarbons
P Schmezer, G Grimmer, P Klein & H L Pool (Heidelberg & Grosshansdorf, FRG)
- 599 (P167) Comparative study on the modifying effect of essential metals and plant extract on the clastogenicity of lead and nickel in mouse bone marrow cells
K Agarwal, H Dhill, A Sharma & G Lalwani (Calcutta, India)
- 600 (P168) Studies on cigarette induced chromosomal and spermatozoal abnormalities in mice
M Tariq, S Qureshi, A M Ageel, F S El Ferali & I A Al-Meshal (Riyadh, Saudi Arabia)
- 601 (P169) *In vitro* mutation assay in mouse testine
D J Winton & B A J Pender (Oxford, UK)
- 602 (P170) Detection of aneuploidy inducing chemicals by single cell DNA analysis in rat tissues
P Maier & H P Schwab (Zurich, Switzerland)
- 603 (P171) The role and place of the study of genotoxicity in the system of development of new drugs
G Zolotareva, Y Bobrinev, N Orlapenko & L Radchenko (Moscow, USSR)
- 604 (P172) Unscheduled DNA synthesis (UDS) in human hair follicles after *in vitro* exposure to 14 chemicals
Y H M Van Erp, P R C M Heirbaut, M J E Koopmans & P J J M Weerings (Hertogenbosch, The Netherlands)

THURSDAY 20 JULY

2000 WORKSHOPS Brighton Metropole Hotel

There are a limited number of places at each Workshop and admission is by pre-booked ticket.

W7 MAJOR CHEMICAL ACCIDENTS

Balmoral Room

Organiser: J A Vale (Birmingham, UK)

W8 EDUCATION IN TOXICOLOGY

Buckingham Room

Organisers: T Malmfors (Stockholm, Sweden) and A D Dayan (London, UK)

W9 EMERGING ISSUES IN THE EVALUATION OF FOOD PRODUCTS
FROM BIOTECHNOLOGY

Edinburgh Room

Organisers: J C Kirschmann (Winston-Salem, USA) and D M Conning (London, UK)

THURSDAY

FRIDAY 21 JULY

0845-1115

SYMPOSIUM 10 Brighton Centre

Clinical and experimental studies of environmental neurotoxins

Chairmen: P Spencer (Portland, USA) and P Preziosi (Rome, Italy)

Abstract

- 0845-0915 605 Mechanisms of neurotoxicity of low molecular weight spider venom toxins
P. N. R. Usherwood, A. J. Mather, B. W. Bycroft & I. S. Blagbrough (Nottingham, UK)
- 0915-0945 606 Occurrence and mechanism of action of marine neurotoxins
T. Narahashi (Chicago, USA)
- 0945-1015 607 Mycotoxin induced encephalopathy and dystonia in children
F. He, S. Zhang, C. Li, F. Qia, X. Liu & X. Lo (Beijing, China)
- 1015-1045 608 Cassava associated neurotoxicity in Africa
H. Rastling (Uppsala, Sweden)
- 1045-1115 609 Chemical toxicity as a basis for age related neurological disease in man
P. Jenner (London, UK)

0845-1115

SYMPOSIUM 11 Brighton Metropole Hotel

Mechanisms of chemically-induced cell injury

Joint Symposium with the Toxicology Section of the
International Union of Pharmacology (IUPHAR)

Chairmen: J. B. Hook (King of Prussia, USA), and F. Oesch (Mainz, FRG)

- 0845-0915 610 The role of the calcium ion in cytotoxicity
S. Orrenius, D. J. McConnell & P. Nicotera (Stockholm, Sweden)
- 0915-0945 611 Ion regulation and cell injury
T. Jones (Baltimore, USA)

FRIDAY 21 JULY

Mechanisms of chemically-induced cell injury (cont)**Abstract**

- 0945-1015 612 Cytotoxicity via interactions with DNA
E Dybing, G Brunborg, J E Dahl, J A Holme, M Låg, S D Nelson,
J G Omichinski, P G Pearson & E J Sæderland (Oslo, Norway;
Bethesda & Seattle, USA)
- 1015-1045 613 Microsomal lipid peroxidation and the role of antioxidants
H Sies & M Murphy (Düsseldorf, FRG)
- 1045-1115 614 Cell death through apoptosis and its relationship to carcinogenesis
R Schulte-Hermann, W Bursch & F Pühringer (Vienna, Austria)

1130-1230

PLENARY LECTURE Brighton Centre

Chairman: W N Aldridge (Cardiff, UK)

Structural and biochemical basis for neurotoxicity

P Spencer (Portland, USA)

1230-1300

CLOSING SESSION Brighton Centre

D S Davies, Chairman, ICT V Executive Committee

P Gehring, President, International Union of Toxicology

P Preziosi, Chairman, ICT VI Executive Committee

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EXHIBITION STAND DESCRIPTION

AIMS & TORPAC

STAND 12

221 Second Avenue, Placentaway,
New Jersey 08854, USA
Tel: 1-201-956-9366 Telex: 6502693781 (MCI/WU1 Network)
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STAND 15

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The services which BIBRA offers in toxicology are the theme of the display which features descriptive literature. The main services are Information & Advice, Consultancy, Contract Research and Testing, Clinical Studies and Teaching.

BOOKSHOW

STAND 1

The Old School, Cottisford Brackley,
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An exhibition of the latest books and journals from major international publishers specially selected for display at IUTOX 89

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EXHIBITION STAND DESCRIPTION

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STAND 8

Unit 22, St. John's Innovation Centre,
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Tel: 0223 421090 Telex: 94011715 Fax: 0223 420844

EPL specialises in pathology, histology and electron microscopy. Services include gross and microscopic pathology, histologic preparation of animal tissues, necropsy services, electron microscopy, fish histopathology, immunocytochemistry, study monitoring, pathology quality assurance, peer review, neurotoxicity evaluation, morphometric evaluation, consultation and archiving services. Personnel include Board Certified Pathologists, Histology Technicians, Medical Technologists.

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ARTEMIS is an integrated computer system that embraces all disciplines in toxicological testing from the protocol to the report - for short term and life time studies, irritancy and sensitization tests, mutations assays, metabolism studies, and for a range of reproductive tests. In addition, modules are in use for the support functions such as pathology, the clinical pathology laboratory, and the dispensary.

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STAND 23 & 24

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Huntingdon Research Centre will be represented by senior scientific staff from the Toxicology and the Industrial and Environmental Divisions. These scientists will be pleased to discuss any aspects of the safety testing programmes required by the pharmaceutical, agrochemical and industrial chemical industries which visitors to the exhibition wish to raise.

IBR Forschungs GmbH

STAND 9

Sudkampen Nr. 31
D-3030 Walsrode, FRG
Tel: 5166-690 Telex: 924342 d Fax: 5166-5026

IBR International BioResearch is a German-based contract research organisation with 25 years experience related to the life science industries. Working to international standards, IBR offers comprehensive service for testing and registration of drugs, chemicals, pesticides, biomaterials, with a particular speciality in the area of biotechnologically manufactured products.

08 JAN 91

EXHIBITION STAND DESCRIPTION

INSTEM COMPUTER SYSTEMS LTD

STAND 25

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Tel: 0785 812131 Telex: 36340 Fax: 0785 812460

DATATEX is a computers system specifically designed for experimental toxicology data management. DATATEX provides an integrated data capture, management and reporting facility for all aspects of toxicology. The complete DATATEX system is exhibited, so please take this opportunity to see how Instem can help you.

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The work includes the assessment of the safety and efficacy of pharmaceutical and veterinary drugs, industrial, agricultural and consumer products and the application of biotechnology to health-care and other industrial disciplines.

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STAND 17

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LABCAT Innovative Programming Associates produce toxicology software. Our worldwide clientele speaks for the quality of the product. Over 275 systems have been purchased to date. If you are interested in genetic toxicology, general toxicology, clinical chemistry, haematology, organ weights, necropsy records or histopathology please come and visit stand 17.

LIFE SCIENCE RESEARCH LTD

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Life Science Research and its sister company Biodynamic provide a wide-ranging safety and efficacy evaluation service for chemically and biologically derived products, encompassing:

alternative method development	industrial toxicology
carcinogenicity and mutagenicity studies	inhalation toxicology
consultancy services	metabolism and pharmacokinetics
contract pathology	registration services
environmental studies	reproductive studies
immunotoxicology	subchronic and chronic toxicology

LIFE SCIENCE RESEARCH - ROMA TOXICOLOGY CENTRE

Stand 13

Via Tito Sperti 12/14,
00040 Pomezia, Italy
Tel: (06) 9120351 Telex: 616421 Fax: (06) 9125387

Life Science Research-Roma Toxicology Centre is a contract Research Laboratory specializing in toxicology services to a range of industrial clients including the pharmaceutical, chemical and food industries. LSR-RTC offers a full range of safety assessment studies designed to satisfy registration requirements worldwide for both pharmaceutical and non-pharmaceutical products.

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Development and manufacture of precision digital electronic data capture systems for use in toxicology and pharmacology. PMX for long-term monitoring of tidal volume and respiratory rate in conscious animals (e.g. reactions to noxious materials), PMS for measurement of dynamic resistance and compliance in anaesthetised animals (e.g. airway hyperreactivity), AIMSplus for measurement of accumulation or dispersal of isotope labelled materials (e.g. accumulation of plasma proteins, inflammatory cells, platelets and mucociliary clearance). Customised software development when appropriate.

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STAND 3

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National Testing Corporation manufactures EYTEX™ and SKINTEX™ in vitro methods which predict ocular and dermal safety. The EYTEX™ system of reagents and instrumentation can be purchased for in-house testing programs. Samples can be submitted for analysis by the EYTEX™ method to the Laboratory Services Division. These products are distributed by ROPAK CORPORATION in Europe and the Far East.

PATHOLOGY DATA SYSTEMS

STAND 11

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Tel: 030-424426535

PDS presents recent developments of the PATHDATA SYSTEM, a software package designed for the acquisition and evaluation of postmortem toxicology data. PDS also introduces its newly developed TOXDATA SYSTEM, a software package designed for the acquisition and evaluation of in-life toxicology data. The PATHDATA/TOXDATA SYSTEM is a future-oriented data base system running on DEC Vax, IBM PC and J1P900 computers.

PERGAMON PRESS

STAND 7

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STAND 34

via Ribes
1 10010 Colferretto/Guasca (TO) Italy
Tel: 0039 125 53746 Telex: 215430 RBMI Fax: 0039 125 53585

Our stand shows the main scientific activities and services carried out at the RBM Institute and in particular: General and Reproductive Toxicology, Ecotoxicology, Mutagenesis, Pharmacokinetic in animals and in healthy volunteers both with labelled and unlabelled compounds, histopathology and Histochemistry services, Molecular Pharmacology and Immunotoxicology.

EXHIBITION STAND DESCRIPTION

RCC GROUP

STAND 26

Postfach CH-4452 Itingen, Switzerland
Tel: 061/98 52 52

The RCC Group is an independent, GLP-compliant, full service contract toxicology, chemistry and environmental research and consulting organisation divided into:

RCC Research and Consulting AG
RCC Research and Consulting AG-Geneva
RCC Umweltochemie AG
CCR Cytotest Cell Research GmbH and Co KG
RCC Registration and Consulting Company AG
RCC Notox Research and Consulting Company b.v.
RCC Research and Consulting Company UK Ltd.

SCANTOX LTD

STAND 16

Tornbjergvej 40
Ejby, DK-4623 Lille Skensved, Denmark
Tel: +45 3 82 11 00, Fax: +45 3 82 12 02

Scantox Ltd is an independent Danish contract research laboratory undertaking toxicological, pharmacodynamic and pharmacokinetic studies with drugs, biomedical products (devices), chemicals, pesticides, food additives and skin care products. Scantox Ltd is the only contract research laboratory in Scandinavia. The laboratory is authorised by the Danish National Testing Board and has recently been inspected by the Japanese GLP authorities.

SHIN NIPPON BIOMEDICAL LABORATORIES LTD

STAND 18

USA Representative Office
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Shin Nippon Biomedical Laboratories Ltd established Research & Development Laboratories for Toxicological studies in Japan in 1957. Our slogan is QUALITY AND RELIABILITY. Our expertise is in studies with monkeys and beagles. We can provide assistance in submission of toxicological data to Japanese ministries, Health & Welfare, International Trade & Industry, Agriculture & Forestry, Environment.

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EXHIBITION STAND DESCRIPTION

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STAND 14

Bromyard Road, Ledbury, Herefordshire HR8 1LH UK
Tel: 0531 4121 Telex: 33644 TOXLAB Fax: 0531 4753

Toxicol Laboratories is an established independent company conducting toxicological research for pharmaceutical, chemical, agrochemical, consumer product, cosmetic and other industries. Toxicol specialises in toxicology, histology, pathology, mutagenicity, clinical chemistry, metabolism, microbiology and human volunteer studies. Toxicol is AAALAC Accredited and complies with FDA, EPA, GLP, OECD, HSE and Japanese regulations.

UNIVERSITIES FEDERATION FOR ANIMAL WELFARE

STAND 2

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Tel: 0707 58202

Good science and good animal welfare go hand in hand. UFAW, the science-based educational charity is concerned with the welfare of animals used for scientific purposes.

UFAW has books on the care, housing and management of laboratory animals available on Stand 2.

UNO BV

STAND 20

PO Box 15, 6900 AA Zevenaar, Netherlands
Tel: 31 8360 24451 Fax: 31 8360 23785

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STAND 21

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Wiley are International Publishers of books and journals in Science, Technology and Medicine. On display at IUTOX are a range of the latest titles together with relevant journals including the Journal of Applied Toxicology and Toxicity Assessment.

IUTOX '89 Exhibition Secretariat
72 Fielding Road, Bedford Park
London W4 1DB

Tel: 01-994 8336 Fax: 01-994 5596 Telex: 916349 COMEXON G

NOTES

